

**The science of surgery. Or the principles of pathology made the basis of medical and surgical practice: by which the healing art is considerably simplified - established upon three morbid conditions of the system. Vol. I / [W.W. Sleigh].**

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SCIENCE OF SURGERY

PRINCIPLES OF PATHOLOGY

AND THE ART OF SURGERY

BY JOHN H. AND GEORGE A. FLETCHER

OF THE UNIVERSITY OF CHICAGO  
AND OF THE UNIVERSITY OF PENNSYLVANIA  
RESPECTIVELY

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To/

Heathcote Esq<sup>r</sup>

With the respects  
of the Author.

Chapel St<sup>e</sup>  
Grosvenor Square.

THE  
**SCIENCE OF SURGERY.**

OR THE  
**PRINCIPLES OF PATHOLOGY**

MADE THE BASIS OF  
*MEDICAL AND SURGICAL PRACTICE:*

BY WHICH THE HEALING ART IS CONSIDERABLY SIMPLIFIED—ESTABLISHED UPON THREE MORBID CONDITIONS OF THE SYSTEM; AND EXTRICATED FROM A LABYRINTH OF USELESS AND ERRONEOUS TERMS, CLASSES, ORDERS, &c.

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By W. W. SLEIGH, Esq.

LECTURER IN LONDON ON ANATOMY, PHYSIOLOGY, AND SURGERY.  
&c. &c. &c.

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“False or doubtful positions, relied upon as unquestionable maxims, keep those in the dark from truth, who build upon them.”

LOCKE, B. 4. Sec. 10.

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**VOL. I.**

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LONDON :

PRINTED FOR JOHN ANDERSON,  
MEDICAL BOOKSELLER, No. 40, WEST SMITHFIELD.

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1825.



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BY WHICH THE READING AND EXAMINATION OF THE SYSTEM; AND  
EXTRACTED FROM A TREATISE OF DISEASES AND SURGERY  
TERMS, CLASSES, ORDERS, &c.

By W. W. WELLS, Esq.

LONDON: IN LONDON ON AUSTIN, PHYSIOLOGY, AND SURGERY.  
&c. &c. &c.

... of doubtful position, relied upon as unquestionable truths,  
have those in the past been true, who built upon them.  
LONDON, H. J. 1835.

VOL. I.

LONDON:

PRINTED FOR JOHN ANDERSON,  
MEDICAL BOOKSELLER, No. 40, WEST SMITHFIELD.



TO  
THE RIGHT HONOURABLE  
LORD VISCOUNT CLIFDEN,

**This Work,**

IS MOST RESPECTFULLY INSCRIBED

**As a Tribute of Gratitude,**

BY

His Lordship's

Most Obedient and Faithful Servant,

W. W. SLEIGH.

CHAPEL-STREET, GROSVENOR SQUARE, }  
August, 1825.





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## PREFACE.

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1. **THE** Author's object in publishing the following Medico-chirurgical Observations, which constitute the substance of his Annual Course of Surgical Lectures, is, with the desire of placing the healing art upon sound scientific principles—of divesting it of empiricism—and of facilitating the acquirement and advancement of medical knowledge.

2. These objects, he flatters himself, he has, if not totally, at all events, in some degree, accomplished.

3. The plan he has adopted for this purpose is the reduction of medical and surgical practice, manual operations excepted, to three principles, viz., nosocoilia\*, debility, and inflammation; by which morbid affections may

\* Νοσος Morbus et Κοιλια Venter.



be treated, not as a vast variety of distinct diseases, but as connected to one or other of these three heads.

4. He does not wish, nor does he pretend, that this work should by any means supersede, or in any degree diminish, the necessity of an extensive professional education; far from it: to treat diseases as proposed in the following pages, no ordinary acquirements are necessary—and as the laws of the animal economy are to be the only guide to this practice, every department connected with them must be well known.

5. On the contrary, any man whatever, who has studied a few standard medical works, may treat diseases upon the fashionable, but more uncertain and unscientific method of the present day.

6. What is attempted in this publication is, to enable the practitioner to act upon physiological and pathological principles; to unshackle him from the dogmas of others; and to teach him to build his practice upon the laws of Nature alone.



7. Surgery, strictly speaking, or according to the etymology of the word, means only what is actually done by the hand, such as performing operations, dressing wounds, &c.; nevertheless, it is divided by the profession\* into the "art and science;" the former has just been defined: the latter comprehends a vast variety of affections, which become so mingled and interwoven with medical ones, that it puts human ingenuity at defiance to separate them.

8. Many of the diseases treated of in this work will, no doubt, be considered by some as belonging only to the physician; and that the Author, as a Lecturer on Surgery, publishing any thing connected with the practice of physic, acts out of his sphere. But for so doing he begs leave to state the following reasons:—First, he really does not know where the line of demarcation exists between surgical and medical cases, nor is he aware that it ever has been satisfactorily drawn;—secondly, he believes it impossible;—thirdly, and lastly, because he views the attempts which

\* See the Diploma given by the Royal College of Surgeons.



have been made to divide these two inseparable branches of the profession as calculated to produce many evils, and retard, rather than promote, medical knowledge.

9. Mr. Abernethy, whose sentiments are always valued, inasmuch as they proceed from a gentleman whose professional knowledge is considerable, and his judgment far beyond the influence of private advantage or interested motives, gives his opinion on this subject thus:—"An evil seems to me to have arisen from the *artificial* division of the healing art into the medical and surgical departments. This division has caused the attention of the physician and the surgeon to be too exclusively directed to those diseases which custom has arbitrarily allotted to their care; and indeed I know of no book to which I can refer the reader for a satisfactory account of febrile affections, except that of Mr. Hunter."

10. The Author would set little value on the opinion of any man who is not as well acquainted with the practice of physic as with the science of surgery, and who has not been



equally educated in both. But those who find fault with his present conduct, he begs leave to remind that he has a good precedent in the method adopted by Celsus, Cullen, Thomas, and many other physicians; who, although professedly writing on the *Practice of Physic*, describe many affections\*, which by all, if there be a distinction, are considered genuine surgical cases.

11. As the Author intends this work more to regulate the attention of the young practitioner and the student, than to convince the prejudiced, or cause a revolution in the systems of the old schools, many superficial physiological observations will be found in it. Finally, he trusts the doctrines taught in it will satisfactorily prove that there is no legerdemain, no secret or mysterious remedies in the healing art; and that founding a man's professional practice upon the laws of the animal economy alone, is the only method of exercising it conscientiously, and with the best advantage to our suffering fellow-creatures.

\* Aneurism, Scirrhus, Urinary Calculi, &c.



## INTRODUCTION.

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12. **MUCH** ambiguity, and no less empiricism, appear to me to exist in the remedies made use of, and the methods adopted, to counteract the morbid affections which afflict mankind; and this, notwithstanding that many eminent men adorn the medical profession at the present day.

13. A few, comparatively speaking, have endeavoured, and are now endeavouring, to direct the attention of medical men to the only true principles by which the healing art can be scientifically practised; and to overcome a prejudice, by no means trifling, that exists amongst many of the Faculty, against this innovation.

14. The evil consequences arising from this ambiguity are innumerable, and too often fatal; and that which is dreaded by those



gentlemen, *a great simplification of the science of medicine*, should in fact be the very reason for its adoption by every enlightened man.

15. As it is judicious for a man to clear the ground upon which he purposes building, I deem it prudent, previously to entering on the topics which are to constitute the substance of this Treatise, briefly to discuss the nature of this professional empiricism, which I shall thus define:—It is that treatment of diseases, or morbid affections, whether local or constitutional, which is founded upon the doctrines of others, without knowing the object to be accomplished; or where a remedy is prescribed, because it has been directed in some medical work; but the reason why, or the *modus operandi*, of such application or medicine is either unknown, or not attended to. This is what I call empiricism, whether in surgery or in the practice of physic, and let the man of science judge its extent.

16. All nosological works are highly calculated to foster and diffuse this unscientific practice; and to them all the evil consequences, which I shall hereafter notice, are justly



attributable. The Physicians' and Surgeons' Vade Mecum, Catechetical publications, and those of Cullen and Thomas\*, &c., &c., are of this description. And when it is recollected that students most generally devote the principal part of their time in committing to memory the above works, to prepare for an examination which consists, for the most part, in trying their proficiency in them, the vast number who treat diseases upon this unscientific, uncertain, and empirical method, will not be a matter of astonishment †.

17. A person who builds his practice upon the above foundation, is no sooner called to a patient, than his first endeavours are directed to find the name of the disease, its class, and order; when he has proceeded so far, he then calls to his assistance the experience of some celebrated Author; and his method of treating it will be according to the

\* In justice to the last two, it is right to observe that, abstractedly considered, they are valuable books.

† Few have had greater opportunities than I have had of witnessing the above mode of study, both among the Students in the Universities of Edinburgh and Dublin, and in the Colleges of Surgeons of England and Ireland.



directions of his *guide*. But when he meets a morbid affection that does not exhibit all the symptoms mentioned by his favourite Author, or when it varies from the general appearance, he is lost for want of his usual diagnostics; perplexed, he knows not what to do, and his patients too frequently fall a sacrifice to his ignorance. Like the Mariner, previous to the discovery of the magnet, whenever a dense atmosphere, or a cloudy horizon, intercepted from his view those objects by which his course was usually directed, he tacked backwards and forwards, uncertain what course to pursue, not knowing the moment when his vessel might come in contact with latent rocks, and be ingulfed in the roaring main.

18. No great degree of discernment is necessary to discover the man who builds his practice upon the doctrines of others, and not upon the general laws of the animal economy. His method of treating diseases is uncertain and fickle; changing his plan perpetually, one day he detracts blood; the next, administers tonics; finds this does not answer, has recourse to cathartics; then again returns to



his blood-letting, and so on\*. If he happens to hit upon the right affection, all is well; but when he supposes the effects of inflammation to arise from debility, or *vice versa*, the consequences need scarcely be mentioned.

19. I have thus endeavoured to give the reader my idea of empiricism, its cause, and its currency; its consequences will be noticed in the course of this work; and I shall now proceed to direct his attention to what I consider the only true method by which the healing art can be scientifically practised, and upon which the doctrine of the following sheets is founded.

20. The first question a practitioner should put to himself upon being called to a patient is, what is the pathological condition of the part or parts affected? or, if it be a general affection, what action is going on in the system? until he can answer these questions satisfactorily to himself; or, in other words, until he actually knows what is the peculiar condition of the system or organ thus affected, the

\* Is this the practice in nine cases out of ten?



methods he adopts to cure the disease will be uncertain, empirical, and most frequently, unsuccessful. But no sooner is he able to discover the morbid state of the part, than the most rational and most effectual plan will suggest itself to him. For example, suppose there be increased action in the system, or in a part, as in inflammation, the indication must be obvious, viz. to diminish or lessen this morbid action.

21. In proportion to a man's knowledge of the physiology of the human body, is he enabled with facility and certainty to discern any aberration in the various functions perpetually going on in it, from their natural or ordinary course.

22. The term physiology is applied to the healthy action of the animal functions, in contradistinction to pathology, which denotes their unhealthy condition. I by no means consider the bare acquaintance with the nature of an organ, or what it produces, sufficient in order to render a man fit to practice the healing art scientifically: he may know that the liver secretes the bile; the skin, the per-



spiration ; the kidneys, the urine ; that in the lungs the blood undergoes an important alteration ; and yet be very far short of that information which I consider essential. Besides, that the liver forms the bile, its sympathies ; the organs upon the healthy action of which it depends for a due supply of that fluid, from which it forms the bile—its immediate and more remote sympathies and uses, &c., should all be well known, and those of every organ in the body. He who is thus acquainted with the animal machine, and builds his practice upon it, is in but little danger of embarrassment, and his practice will most probably be crowned with success, where human exertions can possibly avail.

23. When a man, thoroughly informed on those points, is called to visit a patient, he is perfectly indifferent what his complaint may be termed, or what place it may occupy in any nosological work : he perceives there are, e. g. symptoms of inflammation ; he subdues them by those remedies calculated to check inflammatory action ; he distinguishes the symptoms of real or genuine debility, from those of the spurious kind, although they so



resemble one another, that the common practitioner believes them inseparable, and undistinguishable; he attacks the former with tonics, but treats the latter on the antiphlogistic plan, to the astonishment of the patient's friends, and consternation of his medical attendants. Again, there is a violent pain in an organ, and the functions of it are more or less suspended; he can tell immediately whether the symptoms proceed from an actual disease in it, or merely from sympathy; and by attacking the real seat of the disease, the true, although perhaps distant, cause, he subdues the diseased action.

24. Finally, let a man be well acquainted with physiology and pathology, with the characteristics of healthy and morbid functions; let him have a perfect knowledge of the symptoms, nature, terminations and effects of *inflammation*, *debility*, and *nosocoilia*, and of the methods proper to be adopted to counteract each of these affections, under the heads of the *antiphlogistic*, *tonic*, and *antinosocoiliatic regimens*; let a man, I repeat, be master of these subjects, and there is no affection whatever, that he will not be able to treat upon



the true, scientific principles of the profession.

*Brief remarks on the Laws of the Animal Economy.*

25. The animal kingdom possesses, in common with all organic matter, certain powers, and is subject to peculiar laws, which influence and control the functions of all living bodies.

26. The nature of the vegetable kingdom, though less complex, and elements less numerous than the animal, is yet more compound than the mineral kingdom: oxygen, hydrogen, and carbon, enter into its formation; and to these principles in the animal, is added *azote*. The human body consists of a collection of solids and liquids; containing of the latter five-sixths of its whole weight: the former are perpetually acting on the latter, separating from them various fluids, and converting them into solids. Water is the principal vehicle for carrying throughout the system various salts dissolved in it, with animal matter in the different conditions of *gelatine*, *albumine*, and *fibrine*.

27. Latent or organic sensibility, and con-



tractility, are two faculties or innate powers, existing in all bodies which are endowed with the principle of life; by means of which they are capable of receiving impressions from other bodies acting on them—of converting them to their own uses; and thus of rendering them fit to be incorporated into their systems.

28. To these powers, which exist both in vegetables and animals, there is superadded to the latter, *percipient* sensibility; which enables creatures in this kingdom to become acquainted with the nature of surrounding objects, and to maintain their relationship with the rest of the universe. But some parts in the animal machine, it should be recollected, possess under ordinary circumstances, that is, in a healthy condition, only organic or latent sensibility; such are osseous, ligamentous, and cartilaginous structures. These parts are termed in common language *insensible*—they are with difficulty roused into action; that is, not injured by slight circumstances; bearing with impunity, and without pain, injuries from which other parts forthwith feel acutely; but when once roused into



action, they become more or less altered in their structure; the inflammation runs high; the danger is imminent; and the whole system is thrown into a deranged condition, with considerable sympathetic fever.

29. When we open a joint, for instance, the individual feels but little at the time; yet in the course of a few hours, such violent inflammation sometimes ensues as to extinguish life.

30. Contractility is also sensible and insensible, voluntary and involuntary. All parts in the vegetable, and in the animal kingdoms, are furnished with insensible contractility; the leaves, the vessels, &c., of the former; and the bones, glands, and muscles of the latter, possess it. By these two powers (organic sensibility and contractility), the leaf of the plant, and the bone of the animal, receive, or are affected by, the stimulus of their fluids, the sap in the former, and the blood in the latter, which are conveyed throughout their systems by appropriate vessels. These parts separate from them (the fluids) those particles of matter which are to be incorporated into themselves.



31. By these powers all the secretions in living bodies are performed, and the various fluids produced; in fact, the development of the body itself is nothing more than this process of secretion.

32. This species of contractility is termed *insensible*, or latent; for although the bones and the glands are unremittingly acting on the blood, by means of this faculty, we are totally unconscious of it; but in the animal kingdom, it is also involuntary and sensible, as in the action of the heart, intestines, &c.; and voluntary, as in the muscles of voluntary motion.

33. *Sensible* contractility can be produced by muscular fibres alone; in fact, it is the only true characteristic of this structure of parts, notwithstanding what has been said to the contrary.

34. In consequence of these faculties, sensible and voluntary contractility, and percipient sensibility, man, in common with all the creatures in the animal kingdom, is enabled to enjoy the sensations of pain and pleasure;



of approaching those objects which produce the latter, and of avoiding those which produce the former. This he does through the instrumentality of the senses, which are placed as safeguards over the system; and through the active organs of motion—the voluntary muscles.

35. Thus then, strictly speaking, there is no part of the human body *insensible*; but this sensibility is so regulated and modified, that each part or organ has its peculiar stimulus and manner of feeling; so that what would affect one part, will produce no sensation whatever in the other; luminous rays, for instance, which will not affect any part of the body except the organs of vision, produce considerable sensation in them, and if carried beyond a certain extent, will cause such an action as to destroy the organs. The same is true of sonorous rays on the organs of hearing.

36. Were the joints, or even the surface of the body, acted upon by those circumstances which produce violent affections, and even acute sensations in certain parts, such as the ear, eye, cutis vera, &c., man would



possess but little enjoyment, and the organization of parts would very soon be destroyed ! The propriety of this is evident ; and the unsearchable wisdom of the Great Architect exemplified in it, and indeed in every atom of living matter, can produce nothing but admiration and astonishment !

37. As examples of each part having its peculiar stimulus, if a solution of tartarized antimony be applied to the surface of the eye, it will have little, if any, effect upon it ; but if the same be swallowed, it will produce violent action of the stomach, diaphragm, and abdominal muscles, exciting what is called *vomiting* ; and if the gastric juice taken from the stomach, which this organ is not at all sensible to, be applied to the eye, it will produce violent inflammation.

38. The blood is the proper stimulus of the heart, producing sensible contractility ; and is the common stimulus to all parts of the body, exciting organic contractility. The urine is a stimulus to the bladder ; the presence of chyme in the duodenum, to the liver ; and the foetus to the uterus, &c.



39. Sensibility and contractility are proportioned in the body to a variety of circumstances, as the age of the individual, the peculiar temperament, the sex, climate, the state of sleeping or waking, health or sickness; they are more powerful in the young than in the old; in females than in males; in hot than in cold climates; in persons awake than in those asleep; and in lean people than in fat. These circumstances demand, in a practical point of view, particular attention.

40. Sympathy is the next phenomenon or law in the animal machine, which I shall discuss: by it links are formed throughout the whole system, uniting, in a wonderful manner, the most remote parts of the body; and through the medium of which, they carry on a reciprocal intercourse of sensations and affections. But how this sympathy is produced, or what causes it, remains as yet undiscovered: it can only be explained by supposing that the body possesses a principle, whatever it may be, by which all parts are more or less tied together, and all made to concur in assisting one another in promoting the general good of the whole machine.



41. The arguments of Whytt satisfactorily prove that the nerves are not the exclusive instruments of sympathy, since several muscles of the same limb, which receive branches from the same nerve, do not sympathize, while parts situated at a considerable distance from each other, the nerves of which may have no connexion (except through the medium of the brain), sympathize with one another to a very great degree. Two organs, whose office is similar, but having no connexion through the nerves, frequently sympathize, as the kidneys; and two, whose offices are dissimilar, as the impregnated uterus and the breasts; the testicles and the stomach also sympathize.

42. Haller attributed sympathy to a reaction of the *sensorium commune*; while Whytt considered the soul as the only cause of it; and although Richerand appears to sneer at this latter opinion in one part of his work, yet we find him in another putting the following question: "Does not the principle of life seem to control at pleasure the phenomena of sympathy?" I cannot define sympathy better than in the words of the last mentioned celebrated physiologist: "It is by means



of sympathy that all the organs concur in the same end, and yield each other mutual assistance. It affords us the means of explaining how an affection, at first local or limited in its extent, spreads, and extends to all the systems; it is thus that every morbid process is carried on. The diseases termed general, always originate through the medium of association, in the insulated affection of an organ, or a system of organs.’’

43. The human body should be considered as a great machine, composed of many distinct apparatus, some destined to prepare nutriment for the system, as the digestive organs; some to convey this nutriment from these organs to the blood, as the absorbent system; some to circulate and distribute it through the whole machine, as the heart, arteries, and veins; some for regenerating the blood by separating from it the noxious principles with which it becomes contaminated in its course through the system, as the pulmonary tissue, the liver, the skin, and the kidneys, &c. Others, for the purpose of keeping up a relationship with all surrounding objects, and of affording the sensations of pleasure and pain,



as the brain, the nerves, and the organs of the five senses: next, the active and passive organs of voluntary motion, as the bones and muscles, by which we are enabled to approach or avoid an object at pleasure; then the vocal apparatus by which we convey our ideas to each other; and lastly, the sexual organs for the preservation of the species.

44. Although these various systems are distinct in their offices, yet they are all intimately connected with one another; *something links* them together, much stronger than nervous filaments, arterial branches, or a continuation of the same membrane; so that when one becomes affected, those most calculated to relieve it immediately come into action; and if the desired object be not forthwith accomplished, they one and all become violently agitated, their functions impeded, and their sensibility rendered morbidly acute\*.

45. In short, medical practitioners cannot possibly pay too much attention to the doc-

\* This occurs to but three of the five external senses, when their respective organs are attacked with inflammation: the sense of smell and taste become, during the affection, defunct.



trine of sympathies, as treated at large in many physiological works. "A knowledge of sympathies," says Richerand, "is of the highest importance in the practice of medicine. When we wish to avert an irritation fixed in a diseased organ, experience and observation prove that it is on the organ which bears to it the closest sympathetic connexion, that it is useful to apply medicines intended to excite counter irritation \*."

46. These various organic apparatus are so linked together, and the sympathy is so great between them, that when any particular function, or duty, is to be performed by one of them, nature appears to forsake the others, and concentrate all her powers in that one, proportionately to the importance of the process to be accomplished. Thus, while the process of chymification is going on in the stomach, all other functions are in some measure neglected, and become for a time suspended.

\* The following works on Sympathies may be consulted with advantage, viz. Hippocrates, Vanhelmont, Baglivi, Rega, Whytt, Hunter, Barthez, Bichat, Magendie, Blumenbach, and Richerand.



47. It is upon this law of the animal economy, that the doctrine of Hippocrates, Hunter, and Richerand, is founded, that two *general* morbid affections cannot exist in the system at the same time; nor two local affections in the same part, but that the most powerful extinguishes the other; or, at all events, suspends it. The first says, “*Ambo partes non possunt dolere simul: duobus doloribus, simul orientibus, vehementior obscurat alterum.*”

48. Our practice of producing counter-irritation by *blisters*, issues, &c., is also upon this principle; hence we place them as close as possible to the part affected, without being actually applied to it.

49. The state or condition of the constitution has been arranged, according to certain appearances under four heads, termed *temperaments*, which are by no means undeserving attention. These four were established by Galen, and acknowledged by the majority of the profession. 1st, The *sanguineous* temperament, excited most readily, but slightly; 2dly, the *choleric*, excited readily and violently;



3dly, the *melancholic*, excited slowly, but more permanently; and, 4thly, the *phlegmatic*, excited with difficulty\*.

50. The first of these is characterized by a predominant activity in the heart and arteries, which propel and convey the blood throughout the system: hence persons of this temperament have a sharp, frequent, and regular pulse; a florid complexion, and an animated countenance; they generally enjoy good health; and the diseases with which they are most frequently attacked, are of the inflammatory type.

51. The second is known by a great development of the liver, producing a vast quantity of bile; and the disorders to which persons of this temperament are most subject are always connected with a diseased state of the hepatic organs—producing a derangement of the whole system.

52. The third one is easily recognized by an unhealthy countenance, with an uneasy

\* Blumenbach.



and gloomy appearance, the bowels sluggish, all the excretions imperfectly produced, and the pulse hard and always contracted. There is a general uneasiness, the imagination is gloomy, and the disposition suspicious.

53. Soft flesh, a pale countenance, fair hair, a weak, slow, and soft pulse, with a general predominant development of the cellular tissue, arising from a too great proportion of the fluids to the solids, are characteristics of the fourth and last temperament. The circulation goes on slowly, the imagination is weak, and the passions languid.

54. From all this it may be concluded, that health is not any one particular condition of the machine, which will apply to man in all his various states; for that which is natural in a very young person, would properly be considered morbid in an adult or old one.

55. It may now be asked in what health consists. It is that state of the animal economy, in which there is kept up a due equilibrium between the circulating fluids; the various functions properly performed; and a harmony between them all, proportioned to the age, sex, &c., of the individual. This con-



dition of the system depends, according to Blumenbach, upon the four following principles:—

1st, Fluids, properly prepared.

2d, Solids duly formed from the fluids.

3d, An invigorating influence of the *vital powers*.

4th, A sound *mind* in this sound body.



THE  
PRINCIPLES OF PATHOLOGY

MADE THE BASIS FOR THE SCIENTIFIC TREATMENT OF  
MORBID AFFECTIONS.

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CHAP. I.

SECTION I.

56. **NOSOCOILIA** \*, debility, and inflammation, are three morbid conditions of the system, which are distinct from each other in their nature, cause, and symptoms. I say conditions of the *system*, although each of them may be local or general, that is, confined to a part, or affecting the whole machine.

57. There is no disease, whether local or constitutional, unless a congenital organic af-

\* Although I very much disapprove of coining terms, yet I conceive it here to be indispensable.



fection, that is, not referable to one or other of these heads; so that the whole catalogue of diseases generally enumerated by medical authors, should be treated not as distinct affections, but as connected with one or the other of these. If this assertion be true (and I doubt much, although it may be impugned, that it can be overturned), it is only necessary to be perfectly acquainted with these conditions to treat diseases upon scientific principles.

58. I do not pretend to say, that diseases in general belong only to *one* of these states; far from it: for in the majority of instances, a morbid affection will be connected with them all; and require for its treatment that which is advised under each head. These shall be regularly and separately discussed, after a few preliminary observations on the digestive apparatus, its nature, functions, connexions, and its physiological and pathological conditions; all which appear to me to be absolutely necessary, preparatory to the subject of nosocoilia; in order to present, in one view, to the reader, the importance of this complicated piece of mechanism.



## SECTION II.

*The Physiology of the Digestive Apparatus.*

59. By the term *digestion*, is meant that peculiar process to which substances are subjected, in order to render them fit to be received into, and incorporated with, the system. This process is absolutely necessary for the development of organic bodies ; it is performed in the vegetable as well as in the animal kingdom ; but in the former there is no internal apparatus for this purpose, it being accomplished by external absorption alone.

60. As we advance in the investigation of animated nature, from that particle of matter which appears to form the link between the mineral and the vegetable kingdoms, to that which connects the latter to the animal, and from the lowest reptile in the animal, the polypus, to mammaria, we find this process becoming gradually more and more complicated, and new organs superadded. Creatures in the animal kingdom are alone furnished with an internal digestive apparatus.



The intestinal canal has been considered as the true characteristic between them and vegetables. From the zoophyte to man, we find an intestinal tube, more or less convoluted; and in its vicinity a number of glands situated, which secrete fluids, that are poured into this canal, to liquify, alter, and change the aliment into chyle, all for the purpose of accomplishing this important process. If we examine the organs of digestion in the polypus, there is scarcely any thing perceptible but a mere tube; in fact, this almost constitutes the whole bulk of the reptile—its existence appears to be wholly taken up in procuring sustenance for itself. But as the general mechanism of an animal becomes more complicated in the higher order of creatures, so does this apparatus; and its simplicity of structure is in inverse ratio to the indigestibility of the substances upon which it is destined to live; or to the difference of the substances from the nature of the animal matter into which they are to be converted.

61. Thus in herbivorous animals, or those which subsist entirely upon vegetables, their intestinal canal is comparatively longer, and



their stomachs are, in many instances, more complex than those of carnivorous animals; as the food these latter creatures make use of, being similar to themselves, requires but little effort, comparatively speaking, to be digested, and every thing tends to facilitate the egress of the excrementitious part from their bodies \*.

\* “Aliments obtained from plants are less nutritious than those furnished from the animal kingdom, because in a given bulk, they contain fewer parts that can be assimilated to our own substance. Of all the parts of vegetables, the most nourishing is their amylaceous fecula; but it yields the more readily to the action of the digestive organs, from having already experienced an incipient fermentation; on that account leavened bread is the best of vegetable aliments. The flesh of young animals is less nourishing than that of the full grown, although, at an early age, the flesh of the former abounds more in gelatinous juices; but this abundant gelatine wants the necessary degree of consistence.

However various our aliments may be, the action of our organs always separates from them the same nutritious principles; in fact, whether we live exclusively on animal or vegetable substances, the internal composition of our organs does not alter; an evident proof that the substance which we obtain from aliments, to incorporate with our own, is always the same, and this affords an explanation of the saying of the father of physic, “There is but one food,” but there exist several forms of food.

Attempts have been made to ascertain the nature of the alimentary principle, common to all nutritive substances; and it is conjectured, with some probability, that it must be anala-



62. Man holds a middle station, being omnivorous, not destined to subsist exclusively

gous to gummy, mucilaginous, or saccharine substances; they are all formed from hydrogen and carbon, are well known to differ chemically, only in the different proportions of oxygen which they contain. Thus, sugar is a kind of gum, containing a considerable quantity of oxygen; and which is reduced, in a certain degree, to the state of starch, when brought to a very fine powder by means of a rasp; for the friction, disengaging a portion of its oxygen, deprives it in part of its flavour, and leaves it an insipid taste, similar to that of farinaceous substances. Nothing, in fact, nourishes better, more quickly, and from a smaller bulk, than substances of this kind. The Arab crosses the vast plains of the desert, and supports himself by swallowing a small quantity of gum arabic. The nourishing quality of vegetable and animal jellies is well known; saccharine substances soon clog the appetite of those who are fondest of them. In decrepid old age, some persons live exclusively on sugar: I know several in that condition, who spend the day in chewing this substance, which is a laborious employment for their feeble and toothless jaws. Lastly, milk, the sole nourishment of the early periods of life, contains a great proportion of gelatinous and saccharine matter. Though man, destined to live in all latitudes, is formed to subsist on all kinds of food, it has been observed that the inhabitants of warm climates generally prefer a vegetable diet. The Bramins, in India, the inhabitants of the Canary Islands, and of the Brazils, &c., who live almost exclusively on herbs, grain, and roots, inhabit a climate, against the excessive heat of which they have to seek means of protection; now, the digestion of vegetables is attended with less heat and irritation. The philosophical or religious sects, by which the abstinence from animal food was considered as a meritorious act, were all instituted in warm climates. The school of Pythagoras flourished in



upon either of the above classes of aliment, but equally upon each: hence we find his in-

Greece; and the Anchorets, who, in the beginning of the Christian religion, peopled the solitudes of Thebais, could not have endured such long fastings, or supported themselves on dates and water in a more severe climate. So that the monks who removed into different parts of Europe, were obliged to relax from the excessive severity of such a regimen, and yielded to the irresistible influence of the climate; the most austere came to add to vegetables, which formed the base of their food, eggs, butter, fish, and even water-fowl. In books of casuistry it may be seen on what ridiculous grounds there was granted a dispensation in favour of plovers, of water hens, wild ducks, snipes, scoters, birds, whose brown flesh, more animalized and more heating, ought to have been proscribed from the kitchen of monasteries, much more strictly than that of common poultry.

Consider what is the alimentary regimen of the different nations on the face of the earth, and you will see that the vegetable diet is preferred by the inhabitants of warm countries; to them sobriety is an easy virtue; it is a happy consequence of the climate. Northern nations, on the contrary, are voracious from instinct and necessity: they swallow enormous quantities of food, and prefer those substances which in digestion produce most heat. Obligated to struggle incessantly against the action of cold, which tends to benumb the vital powers, to suspend every organic motion, their life is but a continual act of resistance to external influences. Let us not reproach them with their voracity, and their avidity for ardent spirits and fermented liquors. Those nations that inhabit the confines of the habitable world, in which man is scarcely able to withstand the severity of the climate, the inhabitants of Kamtschatka, the Samoiedes, live on fish, that in the heaps in which they are piled up, have already undergone a certain degree of putrefac-



testinal canal in a medium between both, neither so long as that of herbivorous, nor so short as that of carnivorous animals.

63. In early life, as all the functions of the little machine are peculiarly active, they require proportionally a greater supply of nutriment than when growth is completed, or

tive fermentation. Does not the use of a food so acrid and heating, that in our climate it would inevitably be attended with a febrile action, prove plainly the necessity of balancing, by a vigorous inward excitement, the debilitating influence of powers that are operating from without? The abuse of spirituous liquors are fatal to the European transported to the burning climate of the West Indies. The Russian drinks spirituous liquors with a sort of impunity, and lives on to an advanced age, amidst excesses under which an inhabitant of the South of Europe would sink.

This influence of climate affects alike the regimen of man in health, and that of man in sickness; and it has been justly observed of medicine, that it ought to vary according to the places in which it is practised. Barley ptisan, honey, and a few other substances, the greater part obtained from the vegetable kingdom, were sufficient for Hippocrates in the treatment of diseases, his therapeutic treatment was, in almost every case, soothing and refreshing. Physicians, who practice in a climate such as that of Greece, may imitate this simplicity of the father of physic. Opium, bark, wine, spirits, aromatics, and the most active cordials, are, on the other hand, the medicines suited to the inhabitants of the North: the English physicians use freely, and without risk, these medicines, which elsewhere would be attended with the utmost danger."—RICHERAND.



in the decay of life : hence the process of digestion is much more rapid in children than in old or adult persons ; their viscera much more delicate and tender ; their general susceptibility greater ; and nosocoilia more immediately felt by their systems in general.

### SECTION III.

#### *The Process of Digestion divided into various Stages.*

64. Mastication, deglutition, chymification, chyfication, and absorption, are certain stages of this important process ; each performed in different parts of the intestinal canal ; and are only preparatory to the accomplishment of the sixth or last one, viz. *animalization*. In proportion as any one of these is imperfectly performed, the process which they all assist in accomplishing, is more or less obstructed ; for they all are essential towards its completion. If, for instance, mastication be imperfect, so will chymification ; and this, of course, will retard the process of chyfication.

65. Digestion may be considered as a vital,



mechanical, and chemical process—vital, because the passions of the mind, as sudden and unexpected news, which may produce joy or grief, &c., will retard and totally suspend the process; and tying the par vagum will completely destroy the functions of the stomach—mechanical, as the mastication and the shifting of the food from one part of this organ to the other—and chemical, as the fluids, poured into the alimentary tube—the saliva, gastric, and biliary juices, act upon the food by their chemical properties.

66. Mastication, or the first stage of this process, is more important than people generally suppose, or the majority of the profession are aware of; and its office more indispensibly necessary than has hitherto been believed. It consists not only in the reduction of the food by the teeth into a *soft pulpy mass*, as it is called, but combines the food with a peculiar secretion, termed saliva, which fluid affords to the morsel a quantity of oxygen, as it is well known to possess a strong affinity for this gas.

67. The saliva, which is secreted by glands



in the vicinity of the mouth, consists of four parts of water, and one of albumen, holding in solution various salts, viz. the phosphate of soda, lime, and ammonia, and a small portion of the muriate of soda. According to J. Berzelius\*, it also contains a peculiar animal matter, mucus, lactate of soda, and pure soda. When the morsel has thus been reduced, and intimately mixed with this fluid, it is rolled into a ball upon the dorsum of the tongue, which presents to it a plane inclined backwards, along which it passes, till it is seized by a convulsive action of the muscles of the pharynx, and thrust into the œsophagus: the process of deglutition then commences.

68. The œsophagus is a muscular tube, lined by a mucous membrane, which extends from the posterior part of the mouth to the stomach; the food descends through it, not by the laws of gravity, but by a process analogous to the peristaltic motion of the intestines, performed by the contraction of the muscular fibres of this passage, which grasp each particle, in order to propel it down-

\* Medico-Chirurgical Transactions, Vol. III. p. 242.



wards and forwards. Hence solids are more easily swallowed than liquids, and liquids than aeriform bodies. When there is a morbid affection of these muscular fibres, as in hydrophobia, the patient is totally unable to swallow liquids, although the deglutition of solid substances can be in many instances accomplished with facility; the very sight of liquids is so dreaded by them, that it is quite sufficient to excite a fresh paroxysm.

69. At the approach of death, also, these fibres lose all power, so that when we attempt to give the person any drink he suffers great inconvenience, and appears as if suffocating; the saliva *dropping* down into this tube, sometimes produces a peculiar noise, well known under the common term of the "*rattles*," and which are considered as the harbingers of death. The cause of these various morbid phenomena, must now be clearly perceived.

70. The masticated food received into the stomach, a musculo-membranous pouch, undergoes an important change, being converted into a substance of a semi-fluid consistence, termed *chyme*. This alteration is effected by



means of the gastric juice, a fluid formed by the extreme arteries of the stomach, and composed, according to M. Chevreul,

of oxygen ————— 11 : 00

— Carbonic acid — 14 : 00

— Pure hydrogen — 3 : 55

— Azote ————— 71 : 45

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100 : 00

The chemical composition of the gastric juice is by no means accurately ascertained, in consequence of the impossibility of procuring it unmixed with the contents of the stomach. Spallanzani performed many experiments, for this purpose, by thrusting down into the stomach of certain animals hollow silver tubes and balls, containing portions of sponge. Richerand says—"it, in its natural state, is neither acid nor alkaline; it does not turn red, or green, blue vegetable colours. Its most remarkable quality is, its singularly powerful solvent faculty, the hardest bones cannot withstand its action."

71. Although the gastric juice possesses this great solvent power, yet it is rather an unaccountable fact, that it dissolves or converts,



*with facility*, into chyme, those substances alone which the animal has for some time subsisted on\*: thus, if we suddenly change the diet of an animal, that is, give to an herbivorous creature animal food, or to a carnivorous one vegetables, the gastric juice will have considerable difficulty in acting on it—this peculiarity in the action of this fluid should be particularly attended to in a practical point of view.

72. There is no organ in the body which, in proportion to its size, receives for its bare nourishment so much blood as the stomach—the parietes of which, scarcely the twelfth of an inch in thickness, would not require the twentieth part of it for their support. The manner in which the arteries are distributed to this and to the two neighbouring organs, the liver and the spleen, is worthy of attention: these, the hepatic, the stomachic, and the splenic, branch off from one common trunk, the *cæliac*; the first and the last of these, although they proceed directly towards the vis-

\* It is highly probable that its (the gastric juice) chemical composition, varies at different times, according to the nature of the food."—RICHERAND.



cera from which they receive their names, yet give off considerable branches to the stomach; but one fourth part only of the blood in the hepatic artery goes to the liver, while digestion is taking place.

73. Now the inference which may be reasonably drawn from the above fact is, that while chymification is occurring, but little blood is sent to the liver and spleen, and *vice versa*; and in proportion as the stomach is distended with food, is a vast quantity of the gastric juice poured into it; the creases and angles of the vessels becoming for the time effaced. See 127.

74. According to Haller, the food is not converted into chyme, nor is it admitted to pass into the duodenum in the same order that it was received into the stomach; the pyloric orifice of which acts as a safeguard to the remainder of the alimentary canal, possessing a peculiar degree of sensibility, which enables it to perform this office. The most digestible substances are, as it were, selected from the other contents of the stomach, and first converted into chyme, which is readily



permitted to pass the pylorus; while the less digestible matter is thrown back into its bulging extremity; in which its delay is in proportion to its indigestibility; sometimes for many days, producing headache, nausea, loss of appetite, &c. If its nature be such that the gastric juice cannot alter it, it is either, in the course of some time, ejected from the stomach by vomiting, or, in consequence of the morsel having repeatedly touched the pylorus, and this part becoming accustomed to the stimulus, it is at length admitted to pass. The limits of this work will not allow me to enter more fully into this stage of digestion.

75. The food having been thus converted into chyme in the stomach (\* during which process, when performed duly, no gases are extricated), passes to the duodenum, in which it undergoes another important change: in this intestine the chyle is formed, and floats upon the surface of the excrementitious part of the food; these are separated from one another, the former taken into the system, and the latter is carried forward by the action of the

\* Richerand.



muscular coat of the intestines, and discharged from the body.

76. This change is effected by the united powers of the hepatic and pancreatic secretions; the former is poured into the duodenum through the ductus communis choledicus, and the latter by the pancreatic duct. The bile in producing these changes in the chyme, is itself divided into two portions—its albuminous and saline particles combine with the chyle, and are with it absorbed into the system; while its oily coloured and bitter portions unite with the residue of the food, stimulate the intestines, give a peculiar colour to the fæces, and are discharged with them per anum.

77. The bile is a fluid of a greenish yellow colour, containing much water, albumen, oil, soda, phosphate, carbonate and muriate of soda, phosphate of lime and of ammonia, oxide of iron, and a saccharine substance. It is, as Richerand says, watery, albuminous, oily, alkaline, and saline; hydrogen and carbon predominate in it. It is the only secretion in the body which is produced from venous blood;



except we admit the formation of arterial blood in the pulmonary tissue to be a secretion.

78. Absorption is the next stage of the process of digestion: from the internal surface of the small intestines, innumerable lacteals or absorbents arise; all these run together and form one trunk, which is called the thoracic duct, the commencement of which is termed the *receptaculum chyli*: this duct ascends in the posterior part of the cavity of the abdomen and thorax, and terminates in the angle formed by the union of the left subclavian and internal jugular veins. As the chyle passes along the intestinal canal, these vessels become erected, dip their open mouths into the aliment, and suck up by imbibition the recrementitious particles: these are then conveyed into the blood, as before stated; and being thoroughly mixed with this fluid by the action of the heart, are propelled by this organ all over the body, thus affording nutriment to all parts.

79. This liquid becomes animalized, as it is incorporated with the various parts of the



system, which constitutes the sixth and last stage of the process of digestion.

80. The fact that an animal, after a short time, feels the effect of a protracted abstinence, even for four-and-twenty hours, proves the dependence of the whole machine upon this one process; inanition is quickly followed by a loss of strength, a wasting of the body, discolouration of the fluids, excessive sensibility, sleeplessness, and lastly, death\*.

\* *The Functions of the large Intestines.*

That I might not interrupt the history of digestion, I subjoin the functions of these viscera, in the form of a Note. The large intestines (the cœcum, colon, and rectum), are generally viewed as mere receptacles for the excrementitious part of the food, analagous in office to the vesica urinariæ; but, for many reasons, I am inclined to believe that they perform a function similar to that of the skin—separating from the blood a variety of excrementitious fluids. It is well known that the fæces consist not merely of the residue of the food, but that they are considerably augmented by various secretions poured into the intestinal canal; and to these they owe the peculiar fœtor they possess after they have passed the valve of the colon. Dr. Hamilton says, “the exhalation of excrementitious fluids into the cavity of the intestines, constitutes *the bulk* of the fæces collected within them.” The internal surface of the alimentary tube is studded with innumerable cryptæ, glandular follicles, and mucous lacunæ. These all may be considered as glands, destined to secrete the excrementitious fluids, with which the blood becomes impregnated in its course throughout the



## SECTION IV.

*The Functions of the Liver.*

81. The use attributed to this gland by physiologists in general is, simply to prepare the bile from the blood, which bile is to assist in the process of digestion, in the way just related; but I am inclined to believe that this is not the only use of the liver—the largest

body. In administering purgative medicines there should be three objects kept in view; 1st, to unload the intestines; 2dly, to restore them to their healthy functions; and lastly, to excite these glandular bodies, to draw from the blood a vast quantity of fluids, and thus compensate for the suppression of many others in the body. In nosocoilia, the two first indications must be particularly attended to; and in all inflammatory cases the last one ought also to be accomplished. It should be recollected that the two first can well be effected without the third; but that the third or last cannot without the others. When there is debilitas genuina, the last, while we are accomplishing the first, should as much as possible be cautiously avoided, as calculated to increase the weakness. On the contrary, in inflammatory affections we should invariably endeavour to produce a plentiful discharge into the large intestines; for in proportion as we succeed in this, the third indication, do we open as it were, or promote the functions of the secretory organs, which, in these cases, are always, more or less, suppressed. Vide 141-144; also, 150-154.



gland in the body; nay, I would venture to assert that this use is only secondary; and that the primary use is, to assist the lungs in the process of regenerating the blood, by freeing it of its carbon and hydrogen; and thus to act the part of an auxiliary to the lungs.

82. The process of respiration is considered by the majority of the profession, at the present day, to consist in the digestion, as it were, of the blood by the lungs; the lungs abstracting from it carbon and hydrogen, and supplying it from the atmosphere with oxygen. Some, however, deny that any oxygen is added to the blood by this process.

83. The analogy between the process of respiration and the formation of bile is remarkable: for the lungs and the liver have each two distinct sets of blood-vessels; one set conveying blood for their nourishment, the other set conveying it for them to act upon, and to digest. Thus the lungs have the pulmonary arteries carrying to them venous blood, in order to be converted into arterial blood, which is the proper secretion of these organs; while the liver has the vena porta



conveying to it venous blood, which it digests, and from which it forms the bile. The lungs have also the bronchial arteries conveying to them arterial blood for their support, while the liver has also the hepatic artery conveying to it *arterial* blood for its nourishment. These are the only two viscera in the animal economy thus similarly organized.

84. The blood which is carried to the lungs by the *pulmonary* artery is loaded with carbon and hydrogen, principles which it acquired by its circulation through the body. It is of a dark purple colour, heavy, and a few degrees lower in temperature than the blood at the left part of the heart.

85. The blood conveyed to the liver by the vena porta is also peculiarly impregnated with carbon and hydrogen, which it acquired while circulating through the tortuous vessels of the intestines and spleen. For the vena porta is formed by the mesenteric and splenic veins; and appears from its very formation to be for the purpose of collecting from the system as much carbon and hydrogen as possible. The vena porta thus formed, and conveying venous



blood, enters the great transverse fissure of the liver, and distributes its branches through the substance of this gland; at the extremities of which the bile is formed, a fluid which abounds with carbon and hydrogen. In like manner the pulmonary arteries enter, and are distributed to the lungs: at the extremities of which the arterial blood is formed, and carbon and hydrogen given off.

86. In further corroboration of this hypothesis, I will call the attention of the reader to a few circumstances (otherwise unaccountable) in the economy of the foetal functions. First, the disproportioned and immense size of the liver in the foetus, although the process of digestion does not then take place. Now if the only use of the liver be to form a fluid which may assist in the process of digestion (as the profession believe), there should be no bile formed until this process required it; whereas, on the contrary, we find a considerable quantity of it formed before birth\*.

87. But this circumstance appears satisfac-

\* The meconium which fills the intestines in the foetus, consists principally of bile.



torily explained, when we recollect that the blood in the foetus does not circulate through the pulmonary tissue, and consequently is not regenerated by the process of respiration, till the animal is born. This change in the blood is, till birth, accomplished by the liver and the placenta: by the united powers then of these viscera, the placenta and liver, the inactive state of the lungs in the foetus is compensated for. The former organ is divided into two distinct portions, the maternal and foetal placenta, between which there exists no direct communication, any more than there is between the bronchial and pulmonary systems in the lungs. The foetal blood is partly regenerated in the placenta by the maternal blood, and this process is completed by the liver. The only difference between the process in the placenta and lungs is, that in the former it takes place between two fluids, the maternal and foetal blood; in the latter, between a liquid and an aeriform body; the blood and the atmosphere. After birth, this is the only difference between the process in the liver, and in the lungs, except it be, that in the latter the blood receives a portion of oxygen gas: but the possibility of the blood



being altered without the assistance of the atmosphere, as in the placenta, establishes, I conceive, the probability at least of the correctness of my theory. That the liver secretes the bile before birth, only to keep this organ fit for use immediately after the child is separated from its parent, will by no means solve the difficulty: it is only cutting the knot, not untying it; for there are many organs which are in a perfectly dormant condition during the period that the animal is in the uterus, which are forthwith called into action the moment after birth, viz. the lungs, kidneys, salivary glands, &c.

88. If the liver be only to assist the process of digestion by secreting bile, why is bile formed in a vast quantity for months before the process of digestion commenced? Why does an additional quantity of blood pass through the liver in the foetus, when the umbilical vein might run directly to the vena cava, without giving a single branch to this organ? If the bile be merely to act on the food, why is it formed from venous blood\*?

\* The circumstance that one or two anomalous cases have occurred, where the hepatic artery alone supplied the liver,



Could not nature produce bile from *arterial blood*, as well as she does *all the* other fluids in the body, whether saline, albuminous, oily, or watery, &c. But it would appear that as the lungs in the foetus are inactive, this is compensated for, by the peculiar activity of the liver, digesting the vast quantity of blood that at this time circulates through it; the moment the animal breathes, the functions of the liver are proportionably diminished, the lungs then performing their duty.

89. It is admitted that the skin and kidneys assist the lungs in separating from the blood excrementitious particles; and I must confess that although I perfectly concur in the general opinion respecting the functions of these organs, yet I think we have far more reason to conclude that the *liver* is an auxiliary to the lungs.

90. An affection of the alimentary canal frequently produces an eruption on the skin:

and consequently that the bile was formed from arterial blood, is no more an argument against my theory, than the fact that many have been born with a malformation of the heart, and other organs.



suppressed perspiration excites as often inflammation of the lungs or bowels. When the skin is injured, as in extensive scalds, and the functions of it consequently impeded, the individual perishes, with all the symptoms of difficult respiration. In hot climates, where the skin and liver take a very active part in the regeneration of the blood, they are perpetually the seat of morbid affections. It is the very reverse in cold climates, affections of the lungs being most prevalent.

91. From what has been said on this subject, I presume we may conclude that the lungs are assisted in performing their functions by many organs, particularly the liver, skin, and kidneys. The first by freeing the blood of its carbon and hydrogen; the two others, by taking from it various excrementitious salts. When one becomes morbidly affected, the others for a time supply its office, until overburdened, they struggle and frequently fail in their effort. There is a union between the liver and the lungs, greater than by a continuation of membranes, or a similarity of blood-vessels or nerves, not one made at the discretion of the anatomist, but



by a far more important union—a similarity of function. However unimportant this theory of mine may appear upon first view, yet when we reflect upon the intimate connexion that must exist between these various organs, its importance must be manifest. If it be true that the lungs are assisted in performing their duty in the great animal machine by other organs, as the liver, kidneys, skin, and large intestines, whenever any one of these is in a morbid condition, so that its activity is diminished, the others must necessarily have an additional duty to perform. In proportion to the inactivity of the affected organ will the burden be greater upon the others; so that whichever of them is either naturally the most delicate, or preternaturally predisposed to disease, that one will first exhibit symptoms of derangement. Thus we can satisfactorily trace morbid affections of the lungs, of the skin, and of the liver, modified according to the peculiar nature of the organ affected, to one and the same cause. This cause constitutes the substance of the following chapter.



## NOSOCOILIA.

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### CHAP. II.

#### SECTION I.

##### *Preliminary Observations on this Subject.*

92. **THE** process of digestion is of such vast and paramount importance in the animal economy, that it can scarcely be impeded without more or less deranging the whole system.

93. Nosocoilia, as its name implies, is a morbid condition of the digestive apparatus; which affects the system in various ways, and attacks various parts. Sometimes it affects the head, and produces periodical pains\*. Sometimes it causes a deposition of fluid in the ventricles of the brain, as in hydrocephalus internus†, the bane of childhood;—it affects the mind, producing melancholia, and hypo-

\* See Cases in the last Chapter.

† See Cases in ditto; also Hamilton on purgative medicines.



chondriasis;—it attacks the skin, producing various cutaneous affections\*;—it lays the foundation, in many instances, for phthisis† pulmonalis;—it produces various local affections;—and finally, it so disorders the whole system, that it predisposes the constitution to innumerable morbid actions, augments the symptoms of any existing diseases, and retards the cure in all‡.

94. When the process of digestion is retarded, or partially suspended, the blood is but imperfectly supplied with chyle; and all the organs being dependent upon it for nourishment, are consequently incapable of performing their various duties in the animal economy. The secretions are thus imperfectly produced, and are altered in quantity as well as quality; and all the duties which these secreted fluids had to accomplish, are proportionably deficient.

95. There exists such a chain connecting the digestive organs with all parts in the body, and such *action* and *reaction* are kept up, that

\* See Cases in the last Chapter. † See ditto.

‡ See Abernethy on Local Diseases.



what affects one of them, affects, more or less, them all: and as every thing in practice depends upon the perfect understanding of this mutual co-operation of the animal organs, I shall endeavour to explain it.

96. The blood, which is in fact the vehicle for conveying throughout the system nutritious principles, depends for its due preparation *directly* upon the healthy action of two sets of organs, the respiratory and the digestive; and *indirectly*, upon the healthy action of those glands which secrete the excrementitious fluids; and thus prepared, it distributes to all parts of the body alimentary substances and vitality, affording to them the materials for their development, and for the various duties they are destined to perform in the GREAT MACHINE.

97. Let us suppose the process of digestion to be only in a trifling degree affected, or its activity diminished; the blood then is not duly supplied with chyle, because the chyle itself is not properly formed by the organs of digestion; and as “*fluids properly prepared are the first requisite*” to a healthy



state of the mind and body, all the other "*requisites*" depending upon it, are necessarily deficient,—solids cannot be duly formed from these imperfect fluids—the vital powers cannot exert any "*invigorating influence*" upon the system;—and lastly, there is of necessity an unsound mind in this unsound body. (55.) This is disease—these are the effects of nosocoilia.

98. Particular organs then become affected, and *their* peculiar functions impeded; these re-act upon the whole system, and increase the morbid state of the digestive organs, which originally disordered the whole machine.

99. The liver is one of the first which feels the baneful effects of nosocoilia: the blood upon which this organ acts in forming the bile, is brought to it by the superior and inferior mesenteric veins, which arise from the small and large intestines. If this blood be altered in quantity or in quality, as it always is more or less when the digestive organs are out of order, the functions of the liver are proportionably impeded; and bile, imperfectly



formed, altered in *its* quantity or quality, is poured into the intestinal canal, and instead of promoting the formation of chyle, counteracts it; is then taken into the system, and becomes the cause of many morbid affections\*.  
(140.)

## SECTION II.

### *Symptoms of Nosocoilia.*

100. This affection most generally exists in the system for a considerable length of time, producing *latent* destruction of organs, without exciting any very *evident* derangement in the machine, or any symptoms which would be calculated so to alarm the individual, as to induce him to consult a medical man. This, I verily believe, is the reason why so many thousands fall a sacrifice to diseases, which although situated in parts distant from the digestive organs, yet most unquestionably are the remote effects of nosocoilia.

\* I am aware that this doctrine respecting the absorption of bile, which was first taught by some of the most ancient celebrated physicians, is disbelieved by many of the profession; but I have never heard one argument sufficient to invalidate it.



101. Professional men are most generally consulted, not for any irregularity in the functions of the bowels, but for some morbid derangement in a viscus situated at a distance from these parts \*, or for some general affection of the system †.

102. When a patient is interrogated about the state of his bowels, it not unfrequently occurs that he says they are in perfect good order, neither too costive nor too loose; and this notwithstanding that their functions may have been for some time impeded. Let not the practitioner be deceived by this; if he will only take the trouble to make a more minute investigation into the nature of the affection, he will find, in nine cases out of ten, some of those symptoms which characterize nosocoilia, and which I shall now describe.

103. The symptoms of nosocoilia vary and differ according to the peculiar temperament of the individual: whatever organ, or system of organs, happens to be naturally weak, that first feels the influence of *imperfect digestion*;

\* Hydrocephalus, Phthisis pulmonalis, &c. &c.

† Various Fevers.



for instance, in one person, the liver will first feel the effects of nosocoilia; the lungs, or pulmonary tissue, in another; the kidneys in a third; the skin, or surface of the body, in a fourth; the eyes in a fifth; the generative organs in a sixth; while, in another class of persons, the bowels themselves will be the first to exhibit symptoms of derangement.

104. The first symptom of nosocoilia is, in ninety-nine cases out of a hundred, lowness of spirits. In my experience, I have always found the *mind* first affected; a sound mind cannot exist in an unsound body (97.); and as I have shewn elsewhere (65.) that the passions of the *mind* directly impede or suspend the process of digestion, and I now say that the mind is the first to feel the effects of indigestion. Only observe the state of mind in persons devoted to pleasure, or to the gratification of the palate; life is prolonged in them, short as it may be, only by constantly keeping up a stimulus, which when discontinued, existence itself appears to them a burden.

105. I never saw an individual, while labouring under nosocoilia, in what is commonly



termed "*good spirits*;" there is a peculiar languor, and a lassitude, which generally are the precursors of corporeal symptoms\*.

106. The circumstances which, in a healthy state of the body acted as stimulants to the mind, cease now to have this effect: the person becomes inactive and careless about those things which used to gratify him: he is dejected and desponding; and if there be no actual misfortunes, his fancy forms imaginary ones; and magnifies the most trifling disappointments into the most serious evils.

107. The second or next appearance of disordered digestion is want of rest; sleep becomes much disturbed, is unrefreshing, and the individual rises in the morning after unpleasant and frightful dreams, as fatigued as when he retired to bed. All these are in proportion to the natural irritability of the individual's constitution—to his age—to the du-

\* This is invariably the case in childhood—"a depression of spirits in children should always be viewed with a *jealous eye*, when it is recollected that *care* has little place in an infant breast." See my "*Hints to Parents on the Cause of the fatality of Children*,"



ration of the disease—and to the extent of the morbid action.

108. These symptoms are quickly followed, if not accompanied, with a total loss, *or a deficiency*, of appetite: the sensation of hunger, by which nature warns us of the necessity of repairing the loss that is perpetually sustained by the system, depending upon the healthy action, and healthy condition of the stomach, ceases to be excited when that organ is out of order, or when it is in a state of torpor.

109. The skin is generally dry and hot, because the functions of the large intestines (80.) and of the liver (91.) being impeded, and the blood loaded with excrementitious substances, the skin is rendered unable to throw off the insensible perspiration,—the grand method nature adopts for diminishing the heat of the body, and thus a hot and offensive breath is produced.

110. The tongue is covered with a thick crust, accompanied with a bad taste in the mouth, particularly in the morning;—the



countenance looks heavy, and has more or less a sallow appearance;—the head is sympathetically affected with pain;—the bowels are sometimes costive, at other times loose. If the excrementitious part of the food be not visibly altered in *quantity*, or its evacuation from the body not irregular, it will be found invariably changed in *quality*. Hence the importance, nay the absolute necessity, of carefully and regularly inspecting what passes from the body. The truth is, there is not one of the symptoms which attend nosocoilia so infallible, as the alteration in the natural *quality* of the fæces.

111. These, in a healthy state of the system, are neither too solid nor too liquid: the former denotes an imperfect action of the large intestines (80.); the latter a preternatural relaxation of them. The natural colour of the fæces, as Mr. Abernethy says, is “like that which rhubarb, when made into a paste, presents.”

112. The colour of the fæces in nosocoilia depends much upon the seat of the affection, and the particular part of the chylopoietic vis-



cera disordered; they vary in colour from almost a perfect white to that of a black; the former appearance denotes a suppression of, or a deficiency in, the bile: the latter, that the functions of the large intestines, or of the liver, are considerably deranged. As the bile gives colour to the fæces, an alteration in them must indicate an affection of the liver; but when the matter passed sends forth a very disagreeable or foetid smell, the probability is that the large intestines are considerably affected. (80.)

113. Flatulency not unfrequently accompanies nosocoilia: when digestion is perfect, no gases are extricated (75.), but they are always produced in proportion as this process is imperfectly performed; when the intestines becoming distended, various *flying* pains are felt in the abdomen, constituting colic. If at this time there be also a loss of tone in the intestinal canal, tympanites is sometimes produced. A tenderness now and then is felt upon pressing the parietes of the abdomen, which is to be distinguished from inflammation of the bowels, by attending to the diagnostics. (181.)



114. To the above symptoms a catalogue of others might be added, depending upon the particular part of the body affected; but to mention them now, as they have been noticed in various parts of this work, would be but useless repetition.

### SECTION III.

#### *The Causes of Nosocoilia.*

115. The causes of this affection are in inverse ratio to man's natural condition in a state of simplicity; for in proportion to the progress of civilization and refinement, do we find the digestive organs deranged, their functions impeded, and the number of morbid affections augmented. Almost every circumstance that constitutes a part of *polite* life, tends towards the production of this malady. Hence, *totally* to avoid the causes of nosocoilia, we must return to a simplicity of habits, both in diet and customs, a desideratum, however important, not very likely to be accomplished at the present day, except by those who place such a value upon health,



as to make this sacrifice for its preservation; or when impaired, in order to its restoration.

116. The above fact satisfactorily accounts for the existence, in our time, of many diseases which were totally unknown in former days: these morbid affections are now so numerous, and so variously modified, that human ingenuity, in my opinion, is put to defiance in attempting to enumerate, or even to arrange them. The absurdity then, of any man professing to describe all the diseases to which mankind is liable, must be obvious; and is as impossible as to reckon the shades of colour. Nine-tenths of them having a common cause, are, when treated upon this principle, subdued with proportionate facility.

117. Whatever circumstances tend to weaken the action, or diminish the tone of the stomach and intestines, whether acting directly upon them, or indirectly through the system, are to be considered as the causes of nosocoilia. I shall first notice the former. The use of those substances, which act as stimulants, when persevered in for any length of



time, produces debility of the digestive organs, so as to render them more or less insensible to those substances (as wholesome food, &c.), which should naturally rouse them into action; and when thus debilitated, their proper aliment has no effect upon them. The food then accumulates in the stomach; indigestion takes place, and continues till some stimulus be taken, sufficiently powerful to excite its action. A temporary relief is thus procured, but the debility being increased, recourse must again be had to stimulants.

118. All who indulge in the use of spirituous liquors, wines, or those who give themselves the habit of constantly taking *purgative* medicines, are exposed to all the diseases produced by nosocoilia.

119. Warm drinks, and in fact all fluids taken in great abundance, tend to weaken the stomach, and thus impede the process of digestion, by diluting the gastric juice. The stomach then has to act with increased vigour, in order to digest the food; this produces debility of the organ, and lays the foundation for nosocoilia.



120. Thus, tea and punch-drinkers, &c. &c., sacrifice their health to a trifling gratification: their countenances being generally of a sallow complexion, bespeak the state of their stomachs; which, with loss of appetite, periodical headaches, constipation of the bowels, and debility, sufficiently characterize this affection.

121. Gluttony, or taking more food than is required by nature for the nourishment of the body, acts in two ways in producing nosocoilia; first, by over-distending the stomach, and thus rendering the natural curvature of this organ considerable; secondly, by a large quantity of food requiring a greater energy of the stomach than is natural, and thus leaving it in a state of torpor, and sometimes distended with undigested food. During this exertion, a considerable quantity of blood is diverted from the liver to the stomach, and the power or activity of the former organ is proportionably diminished; bile is not duly formed; and imperfect *chylification* is the consequence. Few persons, if any, will acknowledge themselves to be gluttons; but I consider all more or less so who gratify their palates to the



detriment of their constitutions; and thus injure themselves by their love of the pleasures of the table. Since then the digestive apparatus is debilitated by the *quantity* as well as by the *quality* of the food, the prevalence of nosocoilia is easily accounted for\*.

122. The nature or *quality* of alimentary substances debilitate the stomach in proportion as it differs from the *nutritious principle* itself, or as it is commonly called, indigestible. These, by over exerting this organ, produce weakness of it; for *excessive* effort always produces proportionate torpor, or debility of the animal parts, and thus “blunts physical sensibility †.”

123. The celebrated Gosse, of Geneva, who performed many experiments for the purpose of ascertaining the digestibility of various

\*. “The useful object of cookery is to render aliments both agreeable to the senses and of easy digestion; but it rarely stops here: frequently with persons advanced in civilization, its object is to excite delicate palates, or difficult tastes, or to please vanity. Then, far from being a useful art, it becomes a real *scourge*, which occasions a great number of diseases, and has frequently brought on premature death.”—MAGENDIE.

† Richerand.



substances, states, that animal and vegetable *fibre* concrete albumen, white and tendinous parts; paste containing fat, or butter, and unleavened bread, are extremely indigestible, and require *vast exertion* to alter them, offering considerable resistance to the action of the gastric juice. Thus we may expect, that as substances on which we subsist contain more or less of these properties, will the stomach be debilitated, and the symptoms of nosocoilia supervene\*. (See Note to 61.)

\* Mr. C.T. Thackrah, in his lectures on Digestion, says, that "venison, beef, and mutton, most readily afford their nutriment. Hare, partridge, and game in general, are more digestible than turkey, fowl, and rabbit; and these, than pork and salt meats. Fishes differ considerably in their susceptibility of digestion. Turbot, cod, and haddock, are perhaps as digestible as fowl and rabbit. Soles and salmon are of more difficult solution. Though almost every part of animals afford nutriment, muscle (flesh) yields it most readily. Fat is scarcely soluble in the human stomach. Butter is generally pernicious to the delicate stomach; it, moreover, directly oppresses the stomach. Cheese varies less in its degree of digestibility than in its nutritious and stimulating qualities. It is with difficulty changed by the solvent fluids; and hence, in large quantities, it is very pernicious. New bread is particularly objectionable: a large bulk, even of stale bread, is improper. Green vegetables are useful: in digestibility, turnips are preferable to carrots, and these to potatoes. Fruits vary in their susceptibility of digestion. Of the common kinds, the best are the strawberry and orange, next the rasp, gooseberry, and currant, &c. See p. 80.



124. Another circumstance which contributes towards the production of nosocoilia is imperfect mastication of the food; this deserves attention, forasmuch as real wholesome food, when not duly masticated, may require nearly as much exertion of the stomach to alter it, as very indigestible substances. Persons too frequently neglect this process, or imperfectly perform it; and this from considering it of no very great importance; an erroneous opinion, that even medical men are not exempt from. This process being supposed merely for the purpose of enabling us to swallow substances with facility; a division of them, previous to putting them into the mouth, is thought sufficient to answer the purpose. But I have shewn elsewhere (66.), that this process is an important preparatory step towards chymification (67.); for the food is not only reduced by it into a soft mass, but is intimately mixed with an albuminous fluid. (67.)

125. The process of digestion is frequently suspended or interrupted through the medium of the system; and disorder of the chylopoietic viscera is produced in an equal degree by this



means, as by substances acting directly upon these organs.

126. Local affections, as accidents, or *local* morbid actions, have a peculiar influence over the digestive apparatus: they sometimes render it totally unable to perform its functions, and thus produce nosocoilia. It was first observed, that a disordered state of the bowels retarded the healing of a wound or ulcer; but now it is equally established, although not as generally known, that a local affection has the power of deranging, and constantly does derange, the functions of the chylopoietic viscera, in a very considerable degree. The simple process of a child's *cutting* a tooth, as it is termed, sufficiently corroborates this doctrine; how constantly are the bowels affected during the period of *dentition*? It not unfrequently occurs that a person, although in good health, and having his digestive organs in due order, upon meeting with an accident, as a slight lacerated or punctured wound, forthwith loses his appetite; when his tongue becomes furred, his countenance sallow, his skin hot and dry, and his bowels constipated; and when, in fact, all the symptoms of noso-



coilia make their appearance. Any endeavours which may be made to heal the local injury, or restore the individual to health, in these circumstances, will be useless, unless the remedies adopted be calculated to act upon the digestive organs. How are we to account for these phenomena? Is it through the vascular, the nervous, or the lymphatic system, they occur? Is it by the "*consentientia omnia*" of Hippocrates? Or is it not rather to be attributed to the law of sympathy? (40, to 47.) Mr. Abernethy says, "that the stomach and bowels are disordered by injuries and diseases of parts of the body, has been remarked by various persons; but the subject has never been extensively surveyed, nor viewed with that accuracy of observation which its high importance merits."

127. Great anxiety of mind (65.) suspends the process of digestion in the stomach; and a sedentary life will considerably impede it. While chymification is taking place, the stomach becomes the centre of fluxion, and to it a considerable quantity of blood is directed. (72.) Nature, as it were, summons all her powers to assist in the accomplishment of this



important process; concentrates them in it; and forsakes at the time, more or less, all other parts of the body: a slight shivering is then felt, and the pulse becomes quicker and more contracted. As chymification becomes perfected, the spasm of the skin goes off; the shivering is followed by a gentle warmth; the pulse increases in fulness and frequency; the insensible perspiration is augmented, and a general action, resembling a febrile paroxysm, occurs. "If the stomach, as is indisputable, carries with it into its action all the other organs of the economy; if it summons to its aid, so to say, the whole system of the vital powers; if this sort of derivation be the more conspicuous, as the organization is more delicate, the sensibility more lively, the susceptibility greater," the absolute necessity of avoiding all circumstances which would be calculated to disturb nature, or divert her from her exertions during this process, must be apparent\*.

128. When it is recollected that various affections of the mind, such as anxiety, fear, joy, grief; and also that various functions of

\* See Note to 137.



the body, such as muscular motion, &c., which are frequently called into action during this process; also how nearly every circumstance in polite life tends to produce nosocoilia; and how few persons are exempt from these circumstances, its almost universal extent, and that of its consequences, will not be a matter of astonishment.

129. Having now terminated my remarks upon the causes of nosocoilia, I think we may here pause, reflect upon what has been said, and come to the following conclusions:—First, that there is no state or condition of the system more likely to be general among the inhabitants of this and other civilized nations, than a nosocoiliatic habit. Secondly, that nosocoilia itself is the cause of innumerable diseases, both local and constitutional. Thirdly, and lastly, that the only sure method of removing morbid affections in general, is by attacking nosocoilia, as their predisposing or exciting cause.



## SECTION IV.

*Treatment of Nosocoilia.*

130. Before the object to be accomplished by any proposed method can possibly be understood, the pathological condition of the part or organ affected must be known; and for this purpose I shall remind the reader of what was observed in the preceding part of this work, on this important and interesting subject. It was asserted, that the various circumstances which produce that state of the digestive organs, to which we have given the term nosocoilia, act in diminishing the activity, or lessening the powers of the intestinal canal.

131. The pathological condition then of the digestive apparatus must be evident, viz. a diminished vitality, or a loss of organic sensibility, producing a sluggish action of the intestines, and a suppression, more or less, of the excrementitious fluids, which are naturally poured into them.



132. The first object then must be to unload the bowels; the second, to promote the healthy action of the glandular viscera, which assist in the process of digestion; and the third, to restore *tone* to the intestinal canal. The first is to be accomplished by the use of cathartics, proportioned to the age of the individual, to his strength, and to the intensity of the disease. The purgative medicines that should be used in this stage are the submuriate of mercury, united with an equal quantity of the compound extract of colocynth; two five grain pills taken at bed-time; and their effects promoted by an infusion of senna, in which a little of the sulphate of magnesia has been dissolved, taken the morning after, will be found to constitute the necessary medicines for our first object. It is almost superfluous for me to observe, that throughout our whole treatment, the remote causes of nosocoilia (115.) must be cautiously avoided.

133. The second object is to be attained by the use of the blue pill, which should be persevered in for some time; one pill of five grains should be taken at bed-time, and prevented from getting into the system by a little Epsom



salts taken every morning. It should be recollected, that in this stage it is not our object to purge, but to excite and promote the healthy action of the abdominal glands, particularly the liver; hence one or two stools daily will be quite sufficient.

134. The third and last object, that of restoring tone to the stomach, &c., is to be accomplished by administering tonics, such as the infusion of quassia, of columba, or the compound infusion of gentian; an ounce of any of these infusions, which are simple bitters, may be taken twice or thrice a-day. The Peruvian bark may in some cases be given. These all act upon the coats of the stomach and intestines, and can alone produce strength of the system in general, by restoring tone to the viscera with which they come in contact. (164, 165, 166, 167, 168.)

135. Whatever part of the anti-nosocoiliatic regimen we may be using, we should always keep in view the *object* to be accomplished; for by so doing, we shall not persevere in remedies too long; nor shall we desist from using them until the disease be eradicated. Our



guide should be the action of the abdominal viscera in particular; for if we do not persevere in our treatment till the functions of these viscera be restored to their healthy condition (111.), we shall find the disease returning with all its concomitant symptoms. On the contrary, by continuing the use of the medicines too long, we may produce a degree of debility which would lay the foundation for a number of other affections, as dropsy, &c.

136. The symptoms of the case should be duly attended to—its vicissitudes should be daily watched, so that the quantity and nature of each dose may be regulated according to circumstances. In proportion as the disease yields, will the spirits become raised—the fæces be restored to their natural colour and consistency (111.)—the tongue be clean about its edges—the appetite improved—the countenance cheerful—sleep less interrupted—the skin moist—and, in fact, the various secretions gradually restored, more or less, to their natural condition. If there should be much debility, the restoratives mentioned under the head of *debilitas genuina* (167.), should be adopted.



137. The diet of convalescents should also be regulated with care, since the stomach is in them in a state of debility; a state produced both by the causes of the disease and the methods used to remove it. Hence food, which in a healthy condition of the chylopoietic viscera, would justly be considered very digestible, might in a state of debility prove highly improper, and act upon the stomach and the system in general, as if it were in its own nature very unwholesome and indigestible\*.

\* "Those who have practised in great Hospitals, know to how many patients indigestions are fatal. I have seen some with large ulcers; suppuration was copious and healthy; the granulations florid, and all promising a happy issue, when ignorant friends bring them by stealth indigestible food, with which they cram themselves, in spite of the utmost watchfulness. The stomach, used to a mild and moderate regimen, at once overloaded with food, is changed into a centre of fluxion, towards which the juices and humours all tend, an irritation is produced beyond that on the ulcerated surface; which, in a little time, ceases to secrete pus, the fleshy granulations become flabby, extreme oppression is felt: with a difficulty of breathing, comes on a pungent pain in the side; the pain sympathetically felt in the lungs makes this organ the seat of an inflammatory and purulent congestion; a rattle ensues, and the patients die of suffocation at the end of two or three days, sometimes in 24 hours; and this fatal termination is especially accelerated, when, as I have often witnessed, a blister is applied to the seat of the pain, instead of the ulcerated surface. It will seem surprising, perhaps, that in the case of which I



138. As the gelatinous parts of animals and vegetables are extremely nutritious, and easy of digestion, as offering but little resistance to the action of the gastric juice (122, 123.), such articles as abound in gelatine should be ordered. Calves-foot jelly, beef tea, arrow root,

have just been speaking, it should be in the lungs and not the stomach itself, that the congestion and pain take place; but besides, that the most permeable organ of the body is the lungs, as well as the weakest, and the most easily yielding to fluxionary motion, a host of instances prove what a close sympathy unites it to the stomach. Let us but call to mind pleurisies and bilious peripneumonies, those acute pains of the side which, since Stahl, physicians have so successfully treated with vomits. The rapidity with which their symptoms go off on the evacuation of the sordes which oppress the stomach, shews clearly that the sympathetic diseases are not owing to the metastasis of bile upon the lungs; and that they do not consist in the simultaneous existence of a gastric affection, or of an inflammatory state of the pleura, or of the lungs; but that they are simple gastric affections, in which the lungs are, at the same time, the seat of a sympathetic pain. The brain does appear to be in more immediate sympathy with the stomach than with any other part of the digestive tube. Disgust from the recollection of loathed food excites vomiting: a more than ordinary exertion of the brain relaxes, disorders, and will even suspend altogether the functions of the stomach; an unexpected piece of news, a violent emotion, are attended with a cessation of the strongest sensation of hunger. It would be useless to bring together, in this place, proofs of the intimate connexion subsisting between the brain and the stomach, through the intervention of the pneumogastric nerves, for the connexion is questioned by no one."—*Richerand's Physiology*, p. 105.



blanc mange, sago, light bread-pudding, with nutritious vegetables (Note to 123.), may be given with advantage to those labouring under nosocoilia, or at the commencement of convalescence. As strength returns to the individual, and the stomach becomes restored to its natural state, the above articles may be gradually changed for more substantial food.

139. The *quantity* of the food should also be attended to (122.); convalescents should never eat much at a time; a little and often should be the rule: the gastric juice will then be able, more thoroughly and with greater facility, to dissolve the aliment. Thus nature will not, as she too frequently is, be called off from other important functions to perform this (127, 72.). It is impossible, in my opinion, to prescribe the exact quantity of food that should be taken at each meal\*. The only direction I can give to guard my patients against taking too much food at one time is, *to desist from eating, while an inclination to eat still remains*†. A delicate person, or indeed

\* Mr. Abernethy, I understand, constantly states to his patients the *precise* quantity of food to be taken.

† A friend of mine has just informed me, that he tells his patients *to rise from table with an appetite*.



any one, should never eat to perfect satiety; and if it be proper that this rule be observed by the healthy, how much more proper is it to be observed by convalescents\*. I may conclude my observations on this topic in the words of Celsus—"bis die potius, quam semel cibum capere."

#### SECTION V.

##### *The Effects of Nosocoilia on the System.*

140. The humoral pathology, however ancient, contains less absurdities, and fewer errors, than perhaps the Profession are aware of; and although many of the doctrines and conclusions, deduced from that system, be in themselves unscientific and untrue, yet the general tenor of it, I am not afraid to aver, is strictly consonant with the laws of the animal economy, and with many physiological and pathological facts. But how many doctrines and systems of human invention, valuable in themselves, have been at their commencement blended with error; and which

\* Vide Note to 137.



perhaps, after flourishing for a short time, have then fallen into disrepute, till at length, becoming purged of their errors, they are once more established. This has been particularly the case with medical systems: many of the doctrines of Hippocrates have undergone the same course, also the Brunonian system, the use of mercury, &c.

141. Nosocoilia affects the system in two different ways, either by diminishing the necessary quantity of chyle (92, 93, 94.), or by producing a torpid condition of the intestinal canal; which condition favours the formation of noxious fluids, that become absorbed into the system, and lay the foundation for many morbid actions.

142. Every circumstance in the structure of the large intestines tends to retard the progress of the excrements, and to retain them. The internal coat of these viscera is an absorbing as well as a secreting surface (Note to 80.); and these functions vary according to circumstances, being sometimes considerably diminished, at other times particularly active. It is now generally believed that various de-



compositions of the residue of the food take place in the intestinal canal; and that substances in the large intestines, not unfrequently undergo even the putrefactive fermentation. Animal poisons, in the form of contagion, can affect the system only through the medium of absorption; and a specific virus applied to any part of the body contaminates the blood, only as it is taken up by the absorbents. That morbid matter is absorbed into the system from the intestinal canal, as well as from any other part of the body, I presume, can hardly be doubted by any reflecting person; and that substances or elements generated in the intestines themselves, are as capable of affecting the system, and of deranging the animal functions, is equally probable. Without giving implicit credence to the theories of *fluxions* and *congestions*, I can readily conceive how a local or a general disease may be produced by morbid matter getting into the system from the intestines; and thus can account for the origin of many, particularly exanthematous, diseases.

143. Intermittents, and many other species of fever, are described as arising from "*marsh*



*miasmata*," and also from what is termed "*contagion*." *Marsh miasmata* is the effluvia proceeding from standing water, where animal and vegetable substances are undergoing the *putrefactive fermentation*; and contagion is a subtle poison, proceeding originally from living bodies. Particles of these decomposed substances which constitute the former, dissolved in a moist atmosphere, wafted by a current of air, are taken into the lungs in *inspiration*, and then being absorbed into the system, give rise to a variety of fevers.

144. Many facts prove that these poisons cannot remain in the human body with impunity, that is without so deranging the animal functions, as that nature becomes roused, and struggling to get rid of them, produces the phenomena to which in the aggregate, we apply the term *fever*. These phenomena are not the *means* nature adopts for the purpose of expelling injurious particles, but the effects of her efforts to expel them. She frequently fails in those efforts, when the system becomes violently perturbed, and fevers are produced. Man, in a state of *nature*, is equally if not more exposed to the *remote* or *exciting* causes



of fever, than man in civilized nations ; yet how seldom is he attacked with this affection ? What reason can be assigned for this ? If two persons be exposed to an *equal* degree of contagion, and only one of them is attacked with fever, there must of necessity be in that person either a peculiar weakness of the powers of nature, or what is termed a *predisposition* in the system to the disease.

145. If two or more persons be bitten by the *same* rabid animal, or if they happen to wound themselves while dissecting the *same* subject, or if they receive a punctured wound in the *same* tendinous parts ; except they *all* be affected, in the first instance with *hydrophobia*, in the second with inflammation, and sometimes mortification of the superior extremity, and in the third with *tetanus* ; those who are affected by the poison or accident, must differ in *the condition* of their constitutions, from those who receive the injury with impunity \*. I am strongly inclined to attribute this *predisposition* to disease to nosocoilia, for the following reasons : First, be-

\* See my observations on the *cause* of peritoneal inflammation, in my “ *Treatise on Lithotomy*,” from p. 6, to 15.



cause nosocoilia prevents the blood being duly supplied with pure chyle (94, 96.); secondly, because it prevents the various organs destined to assist the lungs in purging the blood, from doing their duty (98.); and lastly, because it renders the various organs in the animal machine more or less dormant.

146. When an individual is exposed to contagion, or meets with an accident, nature immediately summons to her assistance those organs she is wont to use, to expel from the system morbid matter; but having lost her control over them in a nosocoiliatic habit, summons them in vain.

147. The methods she adopts for this purpose, is to direct towards various glands a plentiful supply of blood; but these glands having been previously burdened with *half regenerated* blood, in consequence of nosocoilia (96.), are incapable of discharging their duties, and thus give rise to the morbid symptoms of fever. In a healthy and natural condition of the animal body, fevers are frequently prevented\* by the noxious particles

\* Man, in a state of simplicity, when nature is not thwarted



of contagion being carried out of the system by some extraordinary discharge, as by an excessive perspiration, a diarrhoea, &c\*. As old age, syphilis, scurvy, and cancer, are said to predispose the osseous system to fractures, by rendering it preternaturally brittle, so nosocoilia may be said to predispose the whole system to disease, by rendering it susceptible to the powers of, or unable to expel, morbid particles.

148. To what are those exertions of nature to be attributed? Is it to the *vis vitæ*, or to the *vis medicatrix naturæ* of the ancients? Or is it to the *consensus actionum* of the moderns? I acknowledge that I cannot say to what they are to be attributed, and therefore am perfectly indifferent what their cause may be termed. I know not what the principle of

in her functions by a morbid state of the constitution, although he be equally exposed to the exciting causes, is exempt from many fevers, and diseases which afflict the inhabitants of civilized nations. No fact, I conceive, more fully proves the efficacy of nature's powers than this.

\* The lachrymal apparatus affords a striking example of the exertions of nature. No sooner does a foreign body get into the orbit, than this gland becomes a centre of fluxion, and the offending particle is washed away by a flood of tears: though she sometimes fails even in this function.



*life* is, yet am fully persuaded it is not the effect of organization, but a principle super-added to matter, which *produces* organization (40, 41, 42, 43, &c.) Richerand says, “ these *synergies*, or aggregate motions, tending to one end, and arising out of the laws of sympathy, constitute the diseases termed general, as well as the greater part of those called local. It is by means of them, and through these kinds of organic insurrections, if we may be permitted to use that expression, which perfectly expresses our meaning, that nature struggles with advantage, and rids herself of the morbid principle, or of the cause of the disease ; and the art of exciting and directing these actions, furnishes the materials of the most important doctrines of the practice of medicine. In the works of Sydenham we find the following passage on this subject :—“ Dictat ratio, si quid ego hic judico, morbum, quantumlibet ejus causæ humano corpori adversentur, nihil esse aliud quam naturæ conamen, materiæ morbificæ exterminationem, in ægri salutem, omni ope molientis. Cum enim hominum genus, ita volente supremo rerum omnium arbitro ac moderatore, Deo, variis impressionibus, forinsecus advenientibus, excipi-



endis aptum natum sit, fieri non potest, quin idem variis etiam malis fuerit obnoxium: quæ quidem partim ab istis æris particulis nascuntur, quæ cum corporis humoribus male convenientes in idem se insinuaverint, nudo sanguini permista corpus omne morbifico adflant contagio; partim à variis fermentationum generibus veletiam putrefactionibus humorum, qui in corpore, ultra justum tempus, ideo sunt commorati, quia scilicet iisdem digerendis primum, dein excernendis, vel ob nimiam eorundem molem, vel qualitatem, incongruam, super idem non fuit. Hisce rerum circumstantiis, ita intime essentiæ humanæ intertextis complicatisque, ut nemo quisquam se ab illis in solidum queat liberare, natura de ejusmodi methodo, ac symptomatum concatenatione, sibi prospexit, quibus materiam peccantem, atque alienam, quæ totius fabricæ compagem aliter solveret, e suis finibus possit excludere.

149. If, as was stated before (143.), fevers be most generally produced by a peculiar poison formed by the decomposition of animal and vegetable substances in standing waters, and absorbed into the system through the pulmonary tissue, is it unreasonable to sup-



pose that a similar poison, when generated in the body itself, and absorbed by the intestinal canal, should produce similar diseases.

150. I am persuaded, first, that many poisons are generated within the large intestines; secondly, that they are frequently absorbed into the system; and, thirdly, that they are the cause of many general and local diseases. I have now made three propositions, but as I set very little value upon the *bare* assertion, or *ipse dixit*, of any man, I shall proceed to prove them.

151. I observed in 142, that the structure of the large intestines tends to keep the excrementitious parts of the food in the body, and that a spontaneous decomposition of them frequently occurs—these facts none will deny. The *fæces*, composed of animal and vegetable substances, with excrementitious fluids, are placed in the large intestines in the most favourable situation possible for undergoing the putrefactive fermentation—having moisture, the due degree of temperature, and atmospheric air; three principal requisites for this process. What then is to prevent this process—



the vitality of the neighbouring parts? Certainly not: for vitality only guards that substance in which it exists, from the influence of putrefaction; and the matter which I have said undergoes this process, being totally destitute of vitality, the objection must be invalid. The circumstance of various gases being continually extricated from the aliment in the intestinal canal, further corroborates my first assertion.

152. My second proposition is, that these poisons are frequently taken into the system. No person at the present day denies the existence of absorbent vessels in all parts of the body, and the great power of these vessels: but there are some particular parts in the animal machine, in which they are more active, and more numerous than in others. Now they are, I believe, particularly active in the intestines; "absorption," says a celebrated author, "goes on likewise from the surface of the internal parts, with great activity; but it no where is so considerable as in the intestinal canal;" and "it is presumed that the great intestines absorb almost as powerfully as the rest of the digestive canal."



That other fluids, as well as the chyle, are taken up by the absorbents of the intestines, is proved by many circumstances, particularly by the absorption of bile constituting jaundice.

153. I shall now proceed to prove my third and last proposition. This I shall be able to do by the testimony of others, which I always prefer to my own arguments or theories, as I never cite any author except I really value his judgment. Dr. James Hamilton of Edinburgh, observes in his valuable work on the use of purgative medicines, “that an excretion of fluids which have become *noxious*, and which constitute the great bulk of feculent matter, is made from the numerous glands of the intestines. In the latter function, the intestinal canal co-operates with the other excretory organs, the skin, the lungs, and the kidneys—all of which, in respect of this their common relation to the system, have a connexion with one another, and any of them will compensate, to a certain extent, and for a limited time, the interrupted action of the others. Nevertheless, the full activity of all is necessary to the enjoyment of perfect health, and the continuance of life. If again we con-



sider, that the exhalations made into the cavity of the intestines are excrementitious, and will, if retained beyond the usual period, undergo changes, and acquire injurious acrimony\* ; and if, moreover, we advert to the connexion by sympathy, which many of the organs of the complicated animal frame have with the stomach and intestines, we cannot but recognize the great influence which these must possess over the comfort, the health, and the life of the individual." In Mr. Abernethy's justly appreciated work, we find the following remarks : " It is probable that much indigested matter is absorbed by the lacteals, when the digestive powers fail in their functions."—" Indeed, I think it probable that the profuse discharges which sometimes follow the continued exhibition of purgatives, consist of morbid secretions from the bowels themselves, and not of the residue of alimentary matter detained in those organs." (80.)—" In a perfectly healthy state of the digestive organs, probably no chemical decomposition, even of the fæces, takes place ; yet such changes happen, in some degree, without *apparently* pro-

\* This would be of but little consequence, if there was not a possibility of those noxious fluids being absorbed.



ducing any injurious consequences. To chemical changes we may probably attribute the extrication of inflammable air, and the various and unhealthy odours of the fæcal matter, which are observable in disordered states of the digestive viscera." Richerand observes, that "the fluids not only undergo changes in their composition, their qualities and nature, when the action of the solids is itself altered, but even the absorbent system may introduce into the mass of our fluids heterogeneous principles, evidently the cause of several diseases. In this manner all contagions spread; the virus of the small-pox, of syphilis, of the plague, &c.

154. I have now not only advanced reasons in corroboration of my three propositions, but have proved the truth of them by the authority of three *living* celebrated authors. If then noxious matter can be generated in the intestinal canal, and if this can be absorbed into the system, as these gentlemen acknowledge, it cannot be questioned that the poison which will produce fever, when absorbed by the pulmonary tissue, will have the same effect when taken in through the parietes of the intestines. Hitherto I have confined



my remarks to general derangement of the system under the various species of fever, and omitted almost entirely any hint respecting the cause of many local affections, as eruptions on the surface of the body, or ulcers, or affections of various organs, as of the eye, brain, lungs, &c. I have purposely adopted this course first, that I might not interrupt my general observations on the nature, causes, consequences, and treatment of nosocoilia; and secondly, that I might not describe *now*, those local affections to which, according to the arrangement of this work, I have devoted the latter part of it: thus I will neither divide the subject into two portions, nor make useless repetitions. But let not the reader suppose that I have now finished my observations on nosocoilia and its effects; far from it: in almost every chapter I shall have to allude to it; and certainly in the description of every disease, I shall have to remind him of the paramount importance of a healthy digestive apparatus; of the absolute necessity of attending to the bowels in the treatment of disease; and finally, of those circumstances which I mentioned as the symptoms of nosocoilia.



## CHAP. III.

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### SECTION I.

#### *Debility.*

155. THE synonymous terms — *weakness* and *debility* are, I conceive too frequently used by the Profession, without any definite meaning being annexed to them: this is an ambiguity of language highly improper amongst medical men, as calculated to be productive of the most serious consequences, and cannot be adopted without leading to an inaccuracy of expression, that should cautiously be avoided in medical science. When it is said “an individual is weak,” the natural conclusion is, that something should be administered to strengthen him; or, in other words, to remove the debility: how erroneous, nay, I will add, how fatal is this doctrine! Frequently we find a person exhibiting appearances of great weakness, when in fact this weakness is but apparent—the effect,



if I may be allowed the expression, of over-strength—of a superabundant quantity of that very fluid which gives to all parts life and vigour. This may appear at first paradoxical, but I shall endeavour immediately to explain it and to solve the paradox.

156. For the purpose of obviating in some degree the above ambiguity of language, I shall divide debility into two species, viz. *debilitas genuina*, and *debilitas ficta*\*—the former term I apply to that state of the system where there is a *real* loss of tone—the latter, where although there be the external appearances of debility, yet in reality there is no loss of tone or stamina in the body, the symptoms proceeding from increased action. The propriety of this division, and the utility of drawing a line of demarcation between the symptoms of both, cannot be questioned, particularly as it

\* Let not the reader imagine that this division of debility is the same as Dr. Brown's. It should be recollected, that although that gentleman had his *direct* and *indirect* debility, yet he did not pretend to assert that by either term he meant any thing but *genuine debility*. Indeed, the utility of his division I am at a loss to conceive. I am not aware that any man has hitherto attempted to divide debility as I have done; or to draw a line of distinction between the two species.



is acknowledged by every eminent man in the Profession, that many violent inflammatory affections exhibit these deceptive appearances. Although no one has hitherto attempted to draw this line of demarcation between them, yet as I conceive there are certain circumstances connected with the *very nature* of the symptoms which, when attended to, will be sufficient to distinguish one species from the other, I shall endeavour to draw it, and to point out how the proximate causes of the symptoms, or their pathological conditions, differ.

## SECTION II.

### *Genuine or real Debility.*

157. *Debilitas genuina.* By this term, I mean that condition of the system where there is a deficiency in the vital powers; a loss of strength, or tone, in the solids; and an alteration in the *quality*, and sometimes in the *quantity*, of the fluids.

158. The causes of this species of debility



may be considered under two heads, viz. the natural or organic, and the accidental. Among the natural causes we may reckon, 1st, *age*—very young and very old persons being proportionably weak or feeble;—2d, *scrofula*, which consists of a peculiar debility of the lymphatic system;—and, 3dly, organic congenital affections, such as a mal-formation of the heart, lungs, &c. The second class may be considered as composed of accidental causes, the number of which is infinite; and each sufficiently obvious to account for the symptoms of *genuine debility*. These are to be divided into—1st, A want of a due supply of nutriment (80.);—2dly, *Nosocoilia* (94.);—3dly, Some or all of the functions of the system having been excessively exercised, as after inflammation or fever;—4thly, Artificial or unnatural drains, such as suppuration, diarrhœa, active or passive hæmorrhages, &c.;—5thly, Violent emotions of the mind \*;—6thly, and

\* A temporary genuine debility is also produced by violent injuries, as gun-shot wounds, compound fractures, &c. In these instances it lasts only a short time, and evidently proceeds from an affection of the brain, which is rendered unable to give that power to the heart and active respiratory organs, that they always require to perform their functions. Hence the impropriety of proceeding to perform an operation *directly* after



lastly, although not less powerfully, *cold*. I have thus been particular in enumerating many of the most direct causes of debilitas genuina, in order to contrast them hereafter with those of debilitas ficta; and it should be recollected that, while these circumstances produce debility in all classes of persons, the young, the adult, the old, male and female, the *quantity* of the exciting cause, necessary to produce real debility, will depend much upon the age, sex, and constitution, of the individual; e. g. a strong adult man will bear with comparative impunity a loss of blood, or a violent diarrhœa, which would diminish considerably the strength, if not totally extinguish the vital spark, in another.

159. The symptoms of debilitas genuina come on most generally in a gradual manner\*, augmenting in number and in degree, *gradatim*. The symptoms are, a sensation of weakness—inability to perform the usual duties of an accident, or during this state of the system, as well as the evil, although most common practice, of detracting blood under such circumstances, or until the powers of nature be sufficiently recruited.

\* For the exceptions, see 181.



life—great fatigue succeeding the least exertion—susceptibility considerable—a full soft pulse, sometimes slow, but more frequently quick, at all events increased by the most trifling stimuli—a general relaxation of all the secretions, producing excessive perspirations, a moist tongue and mouth, pale copious urine, diarrhœa, loss of appetite;—and lastly, great weakness, and a general emaciation and wasting of the body. These all are proportioned to the duration of the affection, and to the violence of the exciting cause\*.

160. These characteristics of genuine debility can be correctly attributed to a *loss of tone*, in nearly all parts of the body, but particularly in the muscular tissue, and in the glandular and absorbent systems. This *loss of tone* is not confined to any one part or division of the muscles: the voluntary and involuntary being equally affected, and thus equally causing the difficulty of performing any motions by which the former class are called

\* The above catalogue contains the symptoms, modified according to the nature of the cause of all the diseases of debility, as hectic fever, phthisis, &c. &c.



into action, as loco-motion, &c. That the involuntary muscles are also affected is proved by many circumstances, particularly by the involuntary discharges of urine and fæces, also by the diarrhoea which frequently occurs, by a soft and full pulse, and by a want of energy in the functions of the brain. This organ depending upon the powers of some of the involuntary muscles, as the heart, &c. for a due supply of arterial blood, is rendered unable to perform its office by that re-action on the various parts of the body, which these parts require for the perfecting of their divers functions, when this is sent to it imperfectly either in quantity or in quality: in consequence of this, syncope frequently occurs in this species of debility.

161. That there is a weakness or debility in the glandular apparatus, is proved by increased perspiration; by a moist tongue; by pale copious urine; by excessive discharges into the intestinal canal; by loss of appetite, &c.

162. Lastly, the activity or power of the absorbent system is diminished; as is evi-



dent from the accumulation of serum in various parts of the body constituting anasarca, ascites, hydrothorax, &c.; and by the quantity of air which frequently distends the intestines, and the cavity of the abdomen itself. The preceding structures are *directly* affected by debilitas genuina, or in fact, are the parts in which this debility is situated, but all the other solid parts of the body become *indirectly* influenced by it, the ligamentous and the osseous tissues, &c.

### SECTION III.

#### *The Treatment of Debilitas Genuina.*

163. Although the treatment of this affection must vary considerably, according to the nature of the cause producing it, yet there will be but one indication, viz. to restore strength to the system at large. If any person be debilitated for want of a due quantity of aliment, nothing better can be given than food, regulated by the directions in (137, 138.) The causes of the debility must in every instance be removed if possible, before any benefit can be



expected from the use of the *tonic regimen*. But frequently we have only the effects of some previous cause existing, in which case our whole attention must be directed to the symptoms of debility: and any circumstances which may tend to increase the weakness, or retard the influence of our remedies, must be avoided.

164. As the chylopoietic viscera are peculiarly relaxed in *debilitas genuina* (159.), and as through them alone we can convey into the system any substantial nutriment, our chief attention should be directed to these organs, and our utmost endeavours exerted to restore them to a healthy condition; for in proportion as we succeed in this, do we give strength to all parts of the body.

165. Every attempt to remove debility from, or to restore strength to, the system, will be found unavailing, as well as productive of loss of time, until the digestive apparatus be rendered capable of acting upon, digesting, and duly converting into chyle, the food we give. It was generally believed amongst medical men, and is even at the present day by many,



that those medicinal substances\* which constitute an essential part of the tonic regimen, actually give strength, (from possessing in themselves some tonic powers,) to *the system* at large. This doctrine is quite erroneous—they possess no such power: the only way in which they act in restoring strength to an individual is, by acting upon the coats of the stomach and intestinal canal so as to restore to *these parts* due tone, and thus to enable them to perform their duty in the great and important process of digestion (134.)

166. A very essential part of the tonic regimen is the diet of our patient, which should be regulated according to the directions given in the chapter on Nosocoilia (137, 138, 139.)

167. Besides paying due attention to the chylopoietic viscera, both in restoring *tone* to them, and in administering to them nutritious substances only, we should observe many other circumstances which will tend considerably to strengthen our patients, and thus to prove powerful auxiliaries. Pure fresh air may

\* The Peruvian Bark, Quassia, Columba, Gentian, &c.



be considered, in point of efficacy, as the next part of the tonic regimen. If the convalescent be in a large city, he should immediately be removed to the country; but if he cannot conveniently accomplish this, he should change his sleeping apartment. This change of room, though less advantageous than change of place, should be done once or twice at least in the week. A frequent change of apparel will also be highly serviceable, particularly of those articles which are in *actual contact* with the surface of the body. I need scarcely add, that cleanliness, both of body and clothes, is indispensable, and should on no account be neglected.

168. The cold bath, when cautiously and judiciously adopted, is of great advantage, and will be found a most potent tonic; but is calculated, when indiscriminately ordered, to do as much mischief, and to be as detrimental, as almost any circumstance whatever. It may appear strange that I should state *cold* to be a powerful tonic, after mentioning it amongst the principal causes of debilitas genuina. (158.) It should be recollected, however, that the term *cold* is, strictly speaking,



unphilosophical; it signifying not a positive body or element, but only the absence of *caloric*. Now *heat* to a certain degree, that is in moderation, promotes the functions of the animal machine; but carried beyond this degree, powerfully relaxes the system. A certain quantity of heat or *caloric* is absolutely necessary to be possessed by all organic bodies\*. In proportion as bodies lose this natural degree of heat, will their powers become diminished; their functions less active; and if the reduction of temperature be considerable, vitality itself extinguished. I do not pretend to say, that the application of cold to the body directly produces strength, or dimi-

\* The various degrees of heat over the world cause a great diversity in the constitutions of man. Thus the inhabitants of the *frigid*, *temperate*, and *torrid* zones differ from each other considerably in their nature, habit, diet, and diseases. The inhabitants of hot climates, as the Brazils, the East and West Indies, are most subject to fevers, to cutaneous affections, to disease of the hepatic organs, and to violent affections from the slightest wounds; while the inhabitants of cold climates, as of Kamtschatka, Iceland, &c., are most attacked with disorders of the pulmonary organs, of the kidneys, &c., and bear with astonishing impunity the severest wounds. It is of importance, in a practical point of view, to recollect that the absence of heat suppresses, in these people, inflammatory actions: hence nothing can teach us more forcibly the importance of abstracting heat from an inflamed part. (215.)



nishes debility ; but this I aver, that its application, when it is adopted with the restrictions I shall immediately mention, will be the means of restoring tone, vigour, and energy to the system. The cold bath should never be used by any one whose system does not possess the *power of re-action*—upon this power depends the advantage or disadvantage of the cold bath: hence its use will never be admissible at the commencement of convalescence, because there is not then this power; nor will it be, until the organs of the body have become so far renovated as to produce a *re-action*. Another circumstance that interdicts the use of the cold bath is a determination of blood to any internal organ, or a predisposition in it to inflammation. Before then we can safely recommend the cold bath, we should be sure that, first, there is no disposition in any internal part to inflammation; and, secondly, that the individual has been so far restored to strength, as that a due re-action of the vital powers may be with tolerable certainty expected\*. When the cold bath agrees

\* This may be known by the state of the pulse, by the natural temperature being uniform over the whole surface of the body, and by the generality of the functions being in a proper state of activity.



with a person, the immersion being only *instantaneous*, he will feel a general glow of heat, his countenance will be lively, and exhibit a ruddy complexion, and his appetite will be sharpened. On the contrary, when it does not agree with him, he will feel a general lassitude and weakness after the bath; the vital powers being unable to produce a reaction, he will frequently, instead of feeling warm, experience a general sensation of cold and shivering, with his skin corrugated. If the application of cold be persevered in after these effects, the lungs, or some internal viscus, will be attacked with inflammation, and the consequence will very often be fatal.

169. *Stimulants* constitute a very important part of the tonic regimen; but they should be administered with great caution and circumspection. There are some cases of genuine debility where the vital powers appear almost exhausted, in which cases the most powerful stimulants should be ordered, to rouse them if possible: instances of this most frequently occur in *the last stage* of typhus fever, of the plague, and where there has been a considerable and sudden loss of blood, &c.



In these and similar cases, either sulphuric æther, brandy, or aromatic spirit of ammonia, may be given with considerable advantage; but the practitioner should recollect to proportion the dose, the quantity, and the strength of the spirit, to the age and constitution of the individual, and to the degree of the debility.

170. In almost every case of real debility, where the use of bitters is advisable, mild stimulants will be found of advantage; and those palatable fluids which consist both of nutritious and stimulant properties, may be allowed in moderation. Mild stimuli will give tone to the stomach, when this organ is in a debilitated state; and thus will be as beneficial to it in this condition, as they are injurious when it *is not* in a state of debility. Convalescents then should have a little wine daily, the quantity proportioned to their age and temperament. The Spanish wines are preferable to either the French or the Rhenish, as they contain a greater quantity of nutritious principles; and thus two objects will be accomplished by the use of these wines; first, that of moderately stimulating the stomach; and secondly, that of nourishing the system.



The French wines are the most nutritious next to the Spanish, but the Rhenish containing a great portion of acid, are more calculated to allay thirst, than to stimulate or to afford nutriment.

## SECTION IV.

*Debilitas Ficta.*

171. I observed before (156.) that while I applied the term *debilitas genuina* to a state of the system where there was a real and actual loss of tone or stamina in the body, I would apply the term *debilitas ficta* to that condition, where although there were the *appearances* of weakness, yet there was no actual loss or deficiency of the *vis vitæ*. The former I have described in the preceding Section: the nature, symptoms, and treatment of the latter I shall now endeavour to discuss.

172. The appearances of debility may arise either from a deficiency of the *vis vitæ* (157.), or from an over or unnatural action of those vessels which convey those substances or fluids



over the body, upon which all parts depend for support. The whole body depending directly for life and strength upon the blood, is affected by this fluid, either when there is a deficiency or an over quantity of it: the latter is actually as injurious to the body, or to any part of it, as the former. Each organ or viscus requires a *certain* portion of it, which being either increased or diminished in quantity, more or less deranges the functions of that part; producing in the former case a morbid activity—inflammation; and in the latter, a want of energy or power—*debilitas genuina*. (157.)

173. If the cause producing the morbid activity be considerable; if the system has been labouring under the effects of *nosocoilia*; (146.) or if the organs affected be supplied with nerves from the great sympathetic\*; the symptoms which usually characterize inflammation do not appear, but symptoms very much resembling those of *debilitas genuina* (159.) supervene†—these appearances deceive

\* Richerand, Hunter.

—† The following observations I have taken the liberty of quoting from a well known work :—“ The effects of inflam-



not merely the friends of the individual, but too frequently the medical attendants (155.)—This is what I term *debilitas ficta*.

mation on the constitution, however, are not simply proportioned to the quantity of inflammation; they are influenced as much by the nature of the parts in which it is situated, as by its extent.

“ When muscles, cellular membranes, skin, &c., are inflamed, the pulse is, as we have described, strong and full. These may be said to be in common strictures. If the inflammation be in tendinous, ligamentous, or bony parts, the stomach sympathizes more than when muscles, &c. are inflamed. The pulse is quicker, but has not so much fulness; and the blood not being propelled so far into the small vessels, forsakes the skin.

“ When inflammation is in vital parts, or such as sympathize with the stomach, there is great depression blended with the constitutional symptoms; the pulse is frequent and small, and the blood is not pushed into the minute vessels. A very remarkable depression of strength very frequently attends an inflammation of the intestines, and the pulse is small and hard; whereas, when the surface of the body is the seat of the affection, there is often a temporary augmentation of tone, with a full, strong, and hard pulse. In fact, when the peritoneum and intestines are inflamed, the patient frequently seems so reduced, and his pulse so small, that the surgeon is afraid to use the lancet. Perhaps, however, he at length ventures to do so; the blood appears exceedingly sizzly, and the pulse gains strength in proportion as the disease yields to, and is benefited by the evacuation.

“ It is a very curious fact, remarked by Mr. Hunter, that all inflammations of parts, which derive their nerves from the great sympathetic nerve, occasion an unusual lowness of spirits.”—  
COOPER.



174. How an increased quantity of the blood which conveys to all parts nutrimentitious principles, and upon which the whole animal machine directly depends for power and for the vis vitæ, can possibly produce the appearances of weakness is, I acknowledge, with some difficulty comprehended. But were I even unable satisfactorily to elucidate the way in which this spurious debility is produced, or the *modus operandi* of nature in those cases, the innumerable facts which I could adduce from my own experience and that of others, would be sufficient to substantiate the truth of my *theory*.

175. The three circumstances which I have just mentioned as predisposing the system to *debilitas ficta*, act pretty much in the same way: whether it be the degree of the exciting cause—the nosocoiliatic state of the system—or the parts being intimately connected with the brain by the great sympathetic nerve—the powers of nature appear to be unable to produce that re-action which causes the symptoms of inflammation, but now those of *debilitas ficta*. These symptoms being more or less suppressed in this case, life becomes



extinguished by a latent action, resembling an internal combustion, which sometimes proceeds with the most effective energy, even to the utter consumption of the body in which it exists.

176. The plain and obvious reason why, in all cases where there is increased action, the common symptoms of inflammation do not appear is, that nature, either from the quality of the cause, or of the part affected, is actually unable to excite those powers which, under ordinary circumstances, she readily does. The pathological condition then of the system, when labouring under *debilitas ficta*, is an overburdened state of the vessels, smothering as it were the symptoms of inflammation, and exhibiting the external appearances of debility.

177. That this state of the system is not merely imaginary, can be proved by many circumstances; but none is more convincing than the fact that blood drawn in these cases always relieves the individual, removes the symptoms of weakness, and brings on the real characteristics of inflammation. To produce



these effects from blood-letting would be utterly impossible, were there an actual loss of tone in the system, or was not the pathological state of the body such as has been described in the preceding paragraph. Let not the reader however suppose that *debilitas ficta* is of rare occurrence, far from it: there are many diseases described and treated as cases of genuine debility, that are really examples of this species.

178. *The causes of debilitas ficta* may be divided into the predisposing and the exciting: the former have been described before; (173.) the latter are all those which give rise to fevers, such as the application of cold damp air—the poison of contagion—suppressed perspiration, &c. In fact, all the exciting causes of inflammation (201.) may be considered capable of producing *debilitas ficta*, provided any of the circumstances mentioned in (173.) be present, so as to produce a suppression, or thwart the exertions of nature. When we recollect that the term *debilitas ficta* is only another name for violent inflammation, the correctness of these observations must be apparent.



179. *The symptoms of debilitas ficta* differ considerably, although hitherto not generally believed so, from those of *debilitas genuina*. That a careless observer should perceive no difference between them is not surprising; but that the attention of the Profession has not been directed to circumstances which I consider diagnostics, appears to me I confess rather unaccountable. There is but one circumstance which is common to both species, viz. *a sensation of weakness*—and from this one circumstance, these affections, although opposite in their nature, cause, symptoms, and *judicious* treatment, are generally confounded together. The medical practitioner should never be satisfied with external appearances only; he should investigate in any dubious case, the very nature and proximate cause of *each* symptom. There is no instance in the practice of his profession in which there will be a greater necessity for his summoning all his judgment, than in the affection now under consideration.

180. We shall now consider the nature, cause, and extent of the *sensation of weakness*, which I mentioned as common to both species. This weakness is confined in *debilitas ficta*,



to the muscles of voluntary motion, not at all affecting the involuntary ones: hence the individual feels a weakness and inability, or at all events, a difficulty in performing locomotion or any exercise which requires the use of the voluntary muscles. But the involuntary ones not being weakened or relaxed in this species, constipation of the bowels, a dry skin and tongue, and scanty urine, are present; thus indicating a condition of these parts far different from a weakness or relaxation of them—even considerable rigidity. The secretions are suppressed or diminished as in inflammation, and the pulse is small, feeble, and contracted. The fact is, the only way in which the symptoms of *debilitas ficta* differ from those of active inflammation is in the sensation of weakness, and the smallness and feebleness of the pulse; in every other respect they are the same. In short, what is this *debilitas ficta* but a violent and dangerous degree of inflammation, so affecting the vital powers as to suppress the exertions of nature; and being thus likely to deceive, to demand particular attention.

181. It was stated before that the symp-



toms of *debilitas genuina* come on *gradually*, while those of *debilitas ficta* come on for the most part *suddenly*, and unpreceded by any circumstances sufficient to account for the degree of weakness that is felt. I shall now enumerate and contrast the symptoms or appearances of both species.

	<i>In Debilitas Genuina.</i>	<i>In Debilitas Ficta.</i>
1. The symptoms come on	Gradually and Slowly *.	Suddenly.
2. Causes	Always manifest	Are never such as are calculated to produce real debility (158).
3. Sensation	Of weakness	Of weakness.
4. The parts affected with debility.	Muscular, Glandular, and Absorbent systems, primarily; and all parts secondarily.	Only the voluntary muscles
5. The pulse.	Soft & full, easily excited.	Small and Contracted.
6. The bowels.	Relaxed.	Constipated.
7. Secretions.	Relaxed.	Suppressed or Diminished.
8. Syncope.	Very common.	Never occurs.
9. Duration.	Sometimes a considerable length of time; except when produced by some manifest cause (158).	Always comparatively short, sometimes not more than 72 hours when life becomes extinguished.

182. A little attention to these symptoms will enable any person to distinguish between the two species of debility—the symptoms of

\* Except when produced by hæmorrhage, or any violent accident, in which case the causes being sufficiently apparent, there is no danger of being deceived. See Note to 158.



debilitas genuina coming on gradually, preceded by some circumstance (158.) sufficient to account for the weakness, and the general relaxation of the secretions, should at once point out the nature of the case: whereas the symptoms of debilitas ficta coming on suddenly, unpreceded by any debilitating cause, and the suppression of the secretions are, one would suppose, sufficient diagnostics. The *bare sensation* of weakness should never influence our judgments, without other concurring circumstances: and we should be the more cautious in preventing ourselves from being swayed by that natural prejudice respecting debility, which is so general\*, as the two species require the very opposite modes

\* In corroboration that the bare sensation of weakness should not regulate our practice, a host of instances might be adduced. There is one affection in particular, which very frequently occurs, wherein the individual feels considerable weakness, a disinclination to move about, and other symptoms of nosocoilia. (100.) Every attempt in these cases to give strength until the cause be removed, aggravates the symptoms of debility, and consequently proves injurious. A want of energy in the chylopoietic viscera is the direct cause of this species of debility. The organs destined to regenerate the blood become overburdened with this fluid, in the way before described; and this is the weight the individual generally complains of. This case is readily recognized by the other symptoms of nosocoilia. (100.)



of treatment—that which is suitable in one, being downright fatal in the other.

## SECTION V.

*The Treatment of Debilitas Ficta.*

183. In describing the treatment of this affection, we should lose sight of every term which is liable to make us think that it is in the remotest degree connected with debility; for while we fancy there is any debility present, our judgments become influenced by the idea; and our practice, which in these cases should be bold, is rendered timid, and proportionally unsuccessful. As the treatment generally recommended throughout the whole of this work for every affection is strictly founded upon the pathological condition of the system, and although the treatment in this case must be obvious, yet I beg leave to call the attention of the reader to the condition of the human body under the influence of *debilitas ficta*. In the first place, when inflammation is only of an ordinary degree, when the parts particularly affected are none of



those which are immediately connected with the brain through the medium of the great sympathetic nerve; and when the system has not been labouring under the baneful effects of nosocoilia, (98.) the symptoms of debilitas ficta never occur. The natural inference then is, that inflammation of a very considerable degree, promoted either by the violence of the cause, the state of the constitution, or the peculiar nature of the parts affected, must be present to produce that state of the system, to which we give the term debilitas ficta; in these cases, nature's exertions are smothered by some or all of the circumstances just mentioned, since the vessels require to be unloaded; their tension to be removed; and the circulating fluids to be diminished in quantity. In proportion as we succeed in the accomplishment of this object, we shall find the sensation of weakness removed, and the true symptoms of inflammation to supervene. These appearances will be sufficient to convince us of the nature of the case, and of the propriety of the depleting system.

184. Blood-letting must in this case be our sheet-anchor; and every other part of the an-



tiphlogistic regimen regulated according to the necessity, to the age and the constitution of our patient, must be adopted. There are but few cases if any, where a medical man will require so thoroughly to be determined in his practice, and to act boldly and with confidence, as in the present instance, he will have very often to act, in adopting the depleting plan in this affection, contrary to the will of his patient; to that of the patient's friends; and not unfrequently in direct opposition to the opinion of other medical attendants. He should therefore act cautiously, although firmly; since his professional character will be at stake; and what is of still greater consequence, his patient's life depends upon his decision. There are many diseases in which a temporary error may be committed with comparative impunity; but in *debilitas ficta* it is quite otherwise: if the symptoms proceed from real debility, and that you bleed, death is the inevitable consequence; and if they proceed from increased action, as in the species of debility now under consideration, the tonic or stimulating plan will prove equally fatal.

185. Although at first there may appear



some difficulty in distinguishing debilitas genuina from debilitas ficta, yet I conceive that difficulty is, if not totally, at all events in a considerable degree, removed by the diagnostics I have given elsewhere. (181.) The symptoms of debilitas ficta coming on suddenly, unpreceded by any debilitating circumstance, and confined to the muscles of voluntary motion, should at once decide the opinion of the practitioner that they do not proceed from a real loss of the vis insita; but constitute that species of pseudo debility which depends upon increased action.

186. I have frequently been called upon to attend patients under such circumstances, and have always had to encounter the greatest prejudice. I recollect attending a lady in the Winter of 1823, in the city; she was about fifty years of age, the mother of a large family, and the wife of an opulent merchant. Upon first seeing her, I at once conceived she was labouring under debilitas ficta, she having many of the symptoms described under that head. She was rather of a delicate appearance, and complained of a sensation of great weight at her chest: her countenance was sallow,



her tongue white, her mouth parched, accompanied with great weakness, a total loss of appetite, &c. Considering it as the species described in the Note to 182, produced by nosocoilia, I ordered cathartics and blood-letting. The latter proposal was at first rejected with great confidence; some of the friends observing, "that if it were possible to put blood into her, it would be more proper than to take it from her." To which observation I replied, "that I was willing to meet any medical gentleman on the subject; if they differed with me, I would of course yield; but that if blood were not taken, and the tonic plan adopted, the lady's recovery I verily believed to be impossible; and if she did recover under their mode of treatment, I should give up my profession, acknowledging that I knew nothing about it, and therefore could not conscientiously practise it." The confident manner in which I spoke of my proposal, made them consent; and I forthwith detracted sixteen ounces of blood. During this operation, the pulse, which before was small and contracted, became fuller and freer, and the weight which she complained of at her chest was diminished. Next day she felt, on the whole, somewhat better;



the blood exhibited a considerable buffy coat, and was very much cupped. I considered it judicious to repeat the blood-letting that and the following days, which was attended with the same beneficial effects. Having then, as I conceived, sufficiently unburdened the vessels, I directed my *whole* attention to the chylo-poietic viscera, and in the course of a few weeks removed the affection, for which I was sent for. I have detailed this one case out of many, in order to give the inexperienced practitioner some idea of the difficulties he will have to encounter in treating debilitas ficta.

187. The following public and interesting case will, in some degree, answer as an instance to shew how the symptoms of increased action are mistaken for those of debility, and the fatal consequence of the error. The appearances on dissection, and the history of the treatment, I have here transcribed, as given by Count Pietro Gamba; and these corroborate my belief of the impropriety of the methods which were adopted.

*April 9th.* Lord Byron had suffered visibly in his health during the last day or two;



the events just mentioned, and the weather, had made him more than usually nervous and irritable; but he this morning received letters from Zante and from England, which raised his spirits exceedingly. He had not been on horseback for three or four days; and though the weather was threatening, he resolved to ride. Three miles from the town we were overtaken by a heavy rain, and we returned to the town-walls wet through, and in a violent perspiration. Two hours after his return home, he was seized with a shuddering: he complained of fever and rheumatic pains. At eight in the evening I entered his room; he was lying on a sofa, restless and melancholy. He said to me, I suffer a great deal of pain; I do not care for death; but these agonies I cannot bear. The medical men proposed bleeding, but he refused, observing, "Have you no other remedy than bleeding?—There are many more die of the lancet than the lance." Some of the physicians answered, that it was not absolutely necessary to bleed as yet, and I fear were too much inclined to flatter his prejudice against that operation. But there was not then the slightest suspicion of any danger, nor was there any at that moment.



*April 10th.* The next day he felt himself perpetually shuddering; but he got up at his usual hour, and transacted business; but he did not go from home.

*April 12th.* The next day he kept his bed with an attack of rheumatic fever.

*April 13th.* He rose from his bed the next day, but did not go out of the house. The fever appeared to be diminished; but the pains in his bones and head still continued: he was melancholy and very irritable. He had not been able to sleep since his attack, and he could take no other nourishment than a little broth, and a spoonful or two of arrow root.

*April 14th.* The following day he got out of bed at twelve: he was calmer; the fever was less, apparently, but he was very weak, and suffered from the pains in his head. He wished, however, notwithstanding the weather was threatening, to go out on horseback, or at least in a boat; but his physicians dissuaded him. It was now thought that his malady was got under, and that in a few days he would be quite recovered. There was no suspicion of danger.

*April 15th.* The fever was still upon him;



but the pains in his head and bones were gone. He was easier: he even wished to ride out; but the weather would not permit. Both on this day and the day before, he had entertained some suspicions that his complaint was of no ordinary nature, and that his physicians did not understand it; but he had not the least apprehension of danger.

*April 16th.* He was better; his complaint was following the usual course, and there was no fear.

*April 17th.* The next day I contrived to get to his room. His countenance at once awakened the most dreadful suspicions: he was very calm; he talked to me in the kindest manner. This was the first day that the medical men seemed to entertain serious apprehensions of the event: he was bled twice; first in the morning, and at two in the afternoon, and lost about two pounds of blood. He did not faint, and his eyes were lively, but he had no sleep; he perspired on the head and neck: and the disease seemed attacking the head. He was dreadfully distressed by want of sleep; and he now said to Dr. Millingen, "I know that without sleep, a man must die or go mad: I would sooner die a thousand



times." He repeated this to his valet Mr. Fletcher.

*April 18th.* During the night of the 17th, he had some attacks of delirium, in which he talked of fighting; but neither that night nor the next morning was he aware of his peril. This morning his physicians were alarmed by appearances of inflammation of the brain, and proposed another bleeding, to which Lord Byron consented, but soon ordered the vein to be closed. Dr. Bruno entreated him, with tears in his eyes, to be again bled. No, he said: if my hour is come, I shall die whether I lose my blood or keep it.

Since their last consultation, the majority of the medical men had thought that the crisis of the disorder was now come, and that the principal danger now was the extreme weakness of the patient; and that restoratives should be administered. Dr. Bruno thought otherwise; but it was resolved to give a draught of claret and bark and opium, and to apply mustard blisters to the soles of the feet. Byron took the draught readily, but refused the blisters: accordingly I was sent for to persuade him, and I returned in all haste with Mr. Parry.



It was about six o'clock in the evening when he said—I want to go to sleep now; and immediately turning round, he fell into that slumber, from which, alas! he never awoke!

On my arrival, they informed me that he was asleep, and that he had suffered the blisters to be applied, not to his feet but elsewhere. The physicians augered well of this sleep—perhaps it was but the effect of the medicine, and only hastened his death.

#### DR. BRUNO'S REPORT OF THE APPEARANCES ON DISSECTION.

1. On opening the body of Lord Byron, the bones of the head were found extremely hard, exhibiting no appearance of suture, like the cranium of an octogenarian, so that the skull had the appearance of one uniform bone: there seemed to be no *diploë*, and the sinus frontalis was wanting.

2. The dura mater was so firmly attached to the internal parietes of the cranium, that the reiterated attempts of two strong men were insufficient to detach it; and the vessels of that membrane were completely injected with blood: it was united from point to point, by membranous bridges, to the *pia mater*.



3. Between the *pia mater* and the convolutions of the brain were found many globules of air, with exudations of *lymph* and *numerous adhesions*.

4. The great falx of the *dura mater* was firmly attached to both hemispheres by membranous bridges, and its vessels were tinged with blood.

5. On dividing the medullary substance of the brain, the exudation of blood from the minute vessels produced specks of a bright red colour. An extravasation of about two ounces of bloody serum was found beneath the *pons varolii*, at the base of the hemispheres, and in the two superior or lateral ventricles a similar extravasation was observed at the base of the *cerebellum*, and the usual effects of inflammation were discoverable throughout the *cerebrum*.

6. The medullary substance was in more than ordinary proportion to the corticle, and of the usual consistency. The *cerebrum* and the *cerebellum*, without the membranes, weighed six pounds. (“*mediche*.”)

7. The channels, or *sulci* of the blood-vessels on the internal surface of the cra-



nium, were more numerous than usual, but small.

8. The lungs were perfectly healthy, and of much more than ordinary volume. (“*gigantiselle*.”)

9. Between the pericardium and the heart, there was about an ounce of *lymph*; and the heart itself was of greater size than usual, but its muscular substance was extremely flaccid.

10. The liver was much smaller than usual, as was also the gall-bladder, which contained air instead of bile. The intestines were of a deep bilious hue, and distended with air.

11. The kidneys were very large, but healthy, and the *vesica* relatively small.

188. There were three *capital* errors in the management of this Nobleman, and to which, of course, I attribute his death. First, not detracting blood at the commencement, but deferring it until the eighth day. Secondly, When blood was taken, not detracting sufficient to produce an evident effect on the system\*. Thirdly, and lastly, The administration of bark and wine; which evidently accelerated and completed the melancholy catastrophe.

\* He should have been bled to syncope.



In defence of these assertions, I appeal to the appearances on dissection. What produced the coagulable lymph?—Inflammation. What produced the high vascularity of the membranes of the brain, &c.?—Inflammation. And I need scarcely ask the question, as the effect was sufficiently manifest, how the bark and wine acted in this condition of the system?

189. Let not the reader imagine these affections do not frequently occur: I can assure him of the contrary. And but that I do not approve of filling up a work with cases which occurred in *private* practice, I could adduce many; and still more of those I have been called upon to examine *after death*, where the tonic plan had been adopted, but where the body exhibited every effect of violent increased action (*debilitas ficta*).

The case of the late Marquis of Londonderry affords another instance of the evil of medical men not distinguishing between *debilitas ficta* and *genuina*. Had that Nobleman (the loss of whose services have been so deeply felt by his country), upon complaining of general uneasiness, weakness, and slight pains in his head, been treated as the nature of his dis-



ease (which I maintain to have been *debilitas ficta*,) required; and instead of the application of cupping-glasses, had blood been detracted from him copiously, his valuable life would no doubt have been preserved. In corroboration of this assertion, I appeal to the fact of his immediate restoration to his senses upon the loss of blood produced by his fatal act; and this is very evident from the earnestness of appeal to his physician. But I merely instance this one, as being another notorious case out of a multitude of others, where patients have perished, from receiving a mode of treatment directly opposite to the one which they ought to have received.



## CHAP. IV.

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### SECTION I.

#### *Inflammation.*

190. I SHALL now proceed to the consideration of Inflammation, the third and last morbid action to which the human system is exposed that I purpose noticing; and as much has been already written on this important and interesting subject\* by many ce-

\* It has long been acknowledged in the schools of medicine, that the foundation of a rational education in physic, must be laid in a minute and accurate acquaintance with the appearances and treatment of the different kinds of fever; but that the knowledge of the phenomena of inflammation is not less extensive in its applications to practice, nor less necessary to the acquirement of a proper education in the art or science of surgery, seems to be only beginning to be perceived by medical men. That this view, however, of the subject of inflammation is just, must appear obvious, when we reflect that of all the morbid affections to which the human body is liable, inflammation is not only one of the most distinct in its forms, and important in its consequences, but it is also by far the most frequent in its occurrence. Indeed there are no external inju-



lebrated men, little more remains for me to do at present, than to collect the luminous rays of information and knowledge, which emanate from their works, to draw them to a focus; and to present, in as plain and practicable a manner as I am able, the deductions capable of being drawn from the labours of these eminent men. Thus I hope to simplify the practice founded on their experiments and discoveries—to point out to the reader the *modus operandi* of the antiphlogistic regimen; and to shew the *reason* for the adoption of *each* remedy calculated to subdue increased action.

191. Inflammation may be divided into six species: according to its quantity, into *local* and *general*—according to its quality, into *phlegmonous* and *erysipelatous*—and according to its condition, into *acute* and *chronic*.

192. When any part of the body exhibits at the same time the four following morbid phenomena, viz. redness, an increased degree

ries, of which inflammation is not almost the immediate effect; and but few, if any, local diseases of which it is not in some degree or other to be regarded as a concomitant, cause, symptom, or consequence.”—THOMSON *on Inflammation*.



of temperature, pain, and swelling, we pronounce it to be in a state of inflammation. These four then may be considered as the true characteristics of inflammation—as the natural consequences of *that condition* of a part, which constitutes the affection itself.

193. As I consider it equally impossible to treat inflammation scientifically, as any other morbid affection, without a perfect acquaintance with the direct or *immediate* cause of *each symptom*, and a knowledge of the pathological condition of the part, I shall endeavour briefly to discuss it, and to shew the object to be accomplished by each remedy. But in order to a perfect elucidation of this subject, the causes of inflammation must first be noticed.

## SECTION II.

### *The Causes of Inflammation.*

194. The causes of inflammation have been divided into the predisposing, the proximate, and the remote. The first of these refers only to the condition of the constitution, or of a



part, which renders it peculiarly susceptible to the exciting or remote causes. (145.) Various parts of the body are, in consequence of their organization, naturally predisposed to inflammation more than others: thus the delicacy of the eye renders it more easily affected than almost any other part of the body; and it would appear that in proportion to the vitality of a part, the more readily is it roused into action: the soft parts are more easily injured than cartilages, and these latter than bones. A portion of the body may also be accidentally predisposed to inflammation; for a part that has been once inflamed, is more liable to a second attack than parts which have never been affected.

195. Of the four temperaments described before, (49.) the sanguineous is that which chiefly predisposes the system to inflammation (50.); therefore, whatever circumstances tend to produce this peculiar state of the human body, must be considered as calculated, indirectly, to predispose it to this affection.

196. The proximate cause of inflammation, however indefinite the term, is now generally



allowed to be the peculiar, or pathological condition of the part, producing directly the four morbid phenomena before noticed. (192.) There is so much importance connected with the discussion and investigation of this part of our subject, that it ought not to be passed over with indifference; but we should candidly examine the theories which have been advanced, from time to time, concerning it. Our ancestors must have seen in some degree the importance of becoming acquainted with the proximate cause of inflammation, or they would not, it is probable, have devoted so much time to its consideration.

197. Among the various and discordant doctrines formerly promulgated, that respecting the state or condition of the blood, of its being impregnated with poisonous humours, and producing what was termed "*fluxions*," (140.) had its advocates and supporters. To this succeeded the doctrine of Boerhaave, who attributed the symptoms of inflammation to what he termed "*error loci*:" he supposed that some of the red globules of the blood accidentally intruded themselves into vessels which were not destined to convey them, that



they thus blocked up the passage, thereby producing irritation, and that the fluids were then directed towards those vessels to wash away the offending particles. This is the substance of his theory.

198. The celebrated Cullen attributed all the phenomena to a "spasm of the extreme vessels, supporting an increased action in the course of them." But certainly this theory could not account for any *one* of the four great characteristics of inflammation. (192.)—How could, for instance, the redness of the part be explained by a spasm of the vessels? or how could this state of the vessels produce increased heat, swelling, &c.? all these symptoms requiring an augmentation, not a diminution in the quantity of blood in the part.

199. The next theory advanced respecting the proximate cause of inflammation, was by Mr. John Hunter, whose memory will be respected by the Profession for centuries. He not only taught, but actually demonstrated, that the pathological condition of a part labouring under inflammation, was "*an increased action of the vessels of the part.*"



“ I froze,” said he, “ the ear of a rabbit, and thawed it again; this occasioned a considerable inflammation, an increased heat and thickening of the part. This rabbit was killed when the ear was in the height of inflammation, and the head being injected, the two ears were removed and dried. The uninflamed ear dried clear and transparent, the vessels were distinctly seen ramifying through its substance; but the inflamed ear dried thicker and more opake, and its arteries were considerably larger.”

200. On these principles we can satisfactorily account for all the morbid phenomena that characterize inflammation; and all the various methods under the antiphlogistic regimen, that are adopted to subdue this *increased action of the vessels*, are founded upon them. This then is what is termed the proximate cause of inflammation, but it should more properly be considered as the proximate cause of its *symptoms*.

201. The remote or exciting causes of inflammation are divided into the mechanical and chemical: under the former head are in-



cluded all accidents, where bodies act *per vim*, on the soft parts, and thus more or less injure the animal substance so as to impede its functions; e. g. blows, falls, foreign bodies projected or discharged from fire-arms, &c. The chemical, are such as act not by violence, but by disorganizing the part through their inherent powers which are incompatible with living matter, as burns, scalds, strong acids, and many of the mineral salts.

202. The celebrated Hunter believed that these circumstances produced inflammatory action, by exciting the powers of Nature to expel from the system the foreign or offending body. Thus when a thorn or splinter gets into the flesh, Nature, as it were, concentrates her powers in the part, proportioning them to the violence of the injury, in order either to insulate it, and then gradually throw it off by a process to be hereafter explained, or to cover its asperities by a coating of organic matter—coagulable lymph; so that it may no longer act as a foreign body, but remain inoffensive in the system for life. Thus musket balls sometimes remain with impunity for a length of time in the most delicate struc-



tures in the human body. I do not conceive it necessary to dwell much upon the history of the exciting causes, therefore shall return to the discussion of the proximate cause of inflammation, and endeavour to shew how the symptoms are all produced by the pathological condition of the part as before noticed. (193.)

### SECTION III.

#### *Symptoms of Inflammation.*

203. The redness of a part is the first symptom of inflammation, when local, acute, and superficial. At the commencement of inflammation, the redness resembles very much the appearance of the cheeks in blushing, and is actually and directly produced by the same cause. Whatever then is the proximate cause of blushing, is also that of inflammation. These affections are principally seated in the capillary vessels, the diameters of which being considerably increased, there is conveyed through each vessel a larger column of blood, and consequently a greater quantity of this



fluid through the whole part; so that if an incision be made into a part thus affected, much more blood will be effused than by a similar wound made in it, when in a healthy condition. This redness differs considerably, according to the quality and violence of the inflammation, and the nature of the part affected; but in all cases it must be obvious, that it depends upon the preternatural quantity of blood in the part. If we rub one of our nails on the common integuments for a short time, a redness is quickly produced; if we persevere much longer, to this redness increased heat will rapidly supervene; and thus the four morbid phenomena (192.) will succeed one another. Those vessels, whose diameters are naturally so small, that the red rays of light are not reflected from the columns of blood they convey, and are commonly but erroneously supposed to convey only the colourless parts of the blood, become in inflammation so distended as to bear that quantity of this fluid, which is sufficient to present a red appearance: thus the proximate cause of the first symptom is easily accounted for by this influx of blood to parts affected with inflammation. Ophthalmia affords a beautiful



example of this doctrine, and teaches us with what rapidity this pathological condition of a part occurs \*.

204. The second symptom of inflammation is increased temperature of the part, but is by no means so considerable as the individual imagines; and however strange this statement may appear, yet there is not a single pathological fact better established. Mr. Hunter was one of the first who placed this beyond a possibility of doubt: this he did by

\* “The redness in inflammation is generally greatest towards one point of the part affected, and decreases gradually as it extends from this, until it becomes imperceptible. But in some inflammations its termination is abrupt and distinctly marked. During inflammation of the skin, it can generally be made to disappear for a moment, under the pressure of the finger, but it returns immediately after the pressure has been removed.

“The kind of redness in some inflammations resembles that of arterial blood; in others it is dark; and in others again, it is of a purplish or bluish hue, having more or less of the colour of venous blood. The utility of attending to these differences in the shades of colour in inflammation, will appear when we come to consider the marks by which the different species of inflammation are distinguished from one another. The redness of parts which have been slightly inflamed not unfrequently disappears after death, so that it is sometimes difficult to discover the precise spot which, during life, had been the seat of inflammation.”—THOMSON.



actual experiments, and by afterwards accounting satisfactorily for the deception \*. Be-

\* The principal instance of supposed increased local heat is in inflammation; and we find that external parts inflamed do actually become hotter; but let us see how far the increase goes. From all the observations and experiments I have made, I do not find that a local inflammation can increase the local heat above the natural heat of the animal; and when in parts whose natural heat is inferior to that which is at the source of the circulation, it does not rise so high; those animals too, which appear to have no power either of increase or decrease in health, naturally appear to be equally deficient in disease, as will be seen in the experiments. I suspect that the blood has an ultimate standard heat in itself when in health; and that nothing can increase that heat but some universal or constitutional affection; and probably the sympathetic fever is such as has no power in this way; and that the whole power of local inflammation is only to increase it a little in the part, but that it cannot bring it above the standard heat at the source; nor even up to it in parts that naturally or commonly do not come up to it, as just above mentioned.

As inflammation is the principal instance capable of producing local increased heat, I have taken the opportunity of examining inflammations, both when spontaneous and in consequence of operations. I have also made several experiments for that purpose, which are similar to operations, and cannot say that I ever saw, from all these experiments and observations, a case where the heat was really so much increased, as it appeared to be to the sensations.

#### EXPERIMENTS ON INTERNAL SURFACES.

*Exp. 1.* A man had the operation for the radical cure of the hydrocele, performed at St. George's Hospital. When I opened the tunica vaginalis, I immediately introduced the ball of the thermometer into it, and close by the side of the testicle. The



fore his time this increased temperature was attributed to many circumstances: some sup-  
 mercury rose exactly to ninety-two degrees. The cavity was filled with lint dipped in salve, that it might be taken out at will: the next day, when inflammation was come on, the dressings were taken out, and the ball of the thermometer introduced as before, when it arose to ninety-eight degrees and three-fourths exactly. Here was an increase of heat of six degrees and three-fourths; but even this was not equal to that of the blood, probably, at the source of the circulation in the same man. This experiment I have repeated more than once, and with nearly the same event.

#### EXPERIMENTS ON SECRETING SURFACES.

*Exp. 1.* I took the degree of heat of a dog's rectum, by introducing the thermometer about three inches; and when it was ascertained, four grains of corrosive sublimate were dissolved in two ounces of water, and the solution thrown up the rectum. The day following the thermometer was again introduced, and then I found the heat somewhat increased, but not quite a degree. As far as one might judge from external appearances, the rectum was very much inflamed, as there was a considerable external swelling, forming a thick elevated ring round the anus.

*Exp. 2.* I introduced into the rectum of an ass the thermometer, and the mercury rose to ninety-eight degrees and a half, exactly; this was repeated several times with the same result. I then threw up the rectum an injection of flour of mustard and ginger, mixed with about a pint of water. About twelve hours after, I introduced the thermometer, and it rose to ninety-nine degrees and a half. The injection was repeated several times, but the heat did not increase.

*Exp. 3.* To irritate the rectum still more, I threw up a solution of corrosive sublimate; and about twelve hours after, I in-



posed that it proceeded from the heat of the blood itself becoming actually augmented, while others imagined that it was produced by the friction of the blood against the parietes of the vessels; but it is now generally known, that the temperature of the blood itself is but little altered, and that that of the part affected is but very little increased.

205. It appears necessary for me, in order to a perfect elucidation of this important subject, to make a few observations on the manner in which animal heat is produced and retained in the midst of an atmosphere subject to various and constant vicissitudes. This wonderful phenomenon is accomplished according to a simple law in Natural Philosophy, which is, “*that bodies as they change their conditions either give off or absorb caloric*: thus water changing into a liquid from its solid state, (ice.) absorbs heat; and in passing from

roduced the thermometer, and found no increase of heat. Twenty hours after, I introduced the thermometer, but the heat was the same. Sixty hours after the injection, the thermometer being introduced, the mercury rose to one hundred degrees, exactly. This injection had irritated so much, as to give a very severe tenesmus, and even blood passed.—HUNTER *on the Blood*, Vol. ii. p. 29.



this liquid to an aeriform state, absorbs it still more, and *vice versa*. Animal heat is generated and regulated in living bodies in the same manner. As the chyle is distributed throughout the system, building up the various parts of the body, it necessarily becomes solid, and thus gives off caloric to the whole machine.

206. Although heat be thus produced and diffused all over the body, yet the greatest quantity by far is generated in the lungs during the important change which the blood undergoes in these organs, from venous to arterial. Besides the arterial blood being from two to four degrees of a warmer temperature than the venous, a considerable portion of *free* caloric is extricated in the pulmonary tissue. In proportion then as a part is near the centre of the circulation, the higher is its degree of temperature, and *vice versa*. The blood at the heart is about 100° Fahrenheit, but sometimes in disease rises to 106° or 107°.

207. That the process in the pulmonary tissue is the great and principal source of animal heat, can be proved by many circumstances:—First, the temperature in the cavity



of the thorax is many degrees higher than in the extremities, and becomes less in proportion as the part is situated at a distance from the lungs: Secondly, the temperature in the feathered tribe is much greater than in other animals, which can be alone accounted for by the greater development of their lungs, for rendering them specifically lighter: Thirdly, the heat of vegetables, in which there is no respiratory apparatus, is many degrees lower than in any animal; although processes, analogous to the circulation and formation of solids from liquids in the latter, are perpetually going on in them, and which produce heat, but in a minor degree, all over their systems.

208. I do not pretend to say that an inflamed part is not warmer than a part in a state of health; but this I wish to be recollected, that the temperature of the part in a state of inflammation, although it is hotter than in the neighbouring parts, does not exceed, nor generally even equal, the temperature of the blood in the lungs; thus there is a *relative* increase of temperature in an inflamed part, which may exceed by many degrees the heat



of the surrounding parts, and yet not even equal that in the thorax. For instance, let the knee or ankle joints, the temperature of which, in a healthy condition, is from  $92^{\circ}$  to  $95^{\circ}$  F. be attacked with inflammation, the heat of the part may rise *many* degrees, and yet not exceed that at the chest, ( $100^{\circ}$ ) as a vast quantity of arterial blood is driven towards the joint, which of course raises its temperature without any alteration in that of the blood itself. An alteration in the quantity, not in the quality of the blood, is therefore the direct and proximate cause of the relative increase of temperature: the *sensation* of heat in an inflamed part is in inverse ratio to its nearness to the heart; that is, the individual does not feel by any means so much heat in a local inflammation near the centre of the circulation, as if it were situated at a distance. In corroboration of these facts, it may be remarked, that a blister applied to the parietes of the thorax, will excite heat scarcely exceeding that of the surrounding parts; but applied to any of the extremities, will excite a degree of heat exceeding that of the neighbouring parts by many degrees\*.

\* “ The increase of temperature in inflammation is now ge-



209. The reason that an individual always fancies the heat in an inflamed part much greater than it actually is, arises from the morbid sensibility of the part, causing him to imagine that all stimuli are considerably augmented, although in fact they are not; thus, circumstances which would have no possible effect on a part in a healthy condition, produce excessive suffering on one in a state of inflammation. Luminous rays, which are only agreeable to the organ of vision in its natural state, are intolerable to it when in a state of inflammation, although they be not even in the usual quantity. There are but few parts of the body that will not bear when in a healthy state considerable pressure, but which when attacked with inflammation, cannot bear the slightest touch without violent pain. The same is true of heat; for although this stimulus be not in the slightest degree increased, yet the morbid sensibility of the part

generally regarded as being dependent on the increased influx of blood into the part inflamed. It has been suggested, that the increased heat may be ascribed to the intricate and inexplicable operation of the vital energy; but if it be the production either of such energy, or of any local secreting power, why does it never rise above the temperature of the blood, which is conveyed into the inflamed part by the arteries?"—THOMSON.



affected will make the person feel as if it were considerably augmented.

210. We have next to consider the *cause* of the pain accompanying inflammation. This is produced by the unnatural condition into which the nerves of the part are thrown by the increased action of the vessels; and is proportioned to the unyielding nature of the parts affected—to the delicacy of the organ—and to the degree of the inflammation. In paronychia, and in the toothache, the pain is generally excruciating, because in the former case the tendinous expansion over the fingers confines the vessels, and in the latter the distention of the vessels is powerfully resisted by the substance of the tooth. In ophthalmia too, the pain is extremely acute, in consequence of the great and peculiar delicacy of the organ. I observed before (28, 29, 34.), that those parts of the body which are commonly considered insensible, but which the Physiologist knows to possess organic sensibility, (28.) on becoming the seat of an inflammatory action, become exquisitely sensible, and convey to the sensorium the most acute agony. This doctrine was established



long since by Dr. Whytt; but whether the pain was produced in those parts by an alteration in the nature of the nerves, or by the formation and development of new ones, had not been entirely decided. It must however depend upon the former circumstance, for in proportion as the inflammation subsides so does the pain, and the parts become as insensible as they were before the inflammation.

211. Pain varies considerably in degree, and by attending to its nature and peculiarities, we are enabled in many instances to decide what kind of action is going on: there is an acute, a throbbing, a continued, a dull, a lancinating pain, &c.; thus we say the pain accompanying phlegmon is acute; that accompanying erysipelas is lancinating; and a throbbing one is that characteristic of the formation of matter\*. Finally, pain may be considered as the most certain symptom of inflammation; although it is frequently only symptomatic of a remote disease; but this latter

\* "The kind as well as the degree of pain varies much in different inflammatory affections. In some instances it is continued, in others periodic; sometimes it is acute; at other times dull; sometimes it is of a pricking kind; at others itchy, lancinating, or throbbing."—THOMSON.



case can, with a little attention, be distinguished from the former, in proportion as the pain in any part is excessive; while there is a total absence of all the other symptoms of inflammation, (192.) are we justified in pronouncing it only symptomatic? for a degree of inflammation sufficient to produce the violent pain, could not exist without producing some, at least, of the other symptoms of increased action.

212. The fourth and last morbid phenomenon, characteristic of inflammation is the swelling; this in the commencement or in the earlier stages of the affection is but trifling, and is produced simply by the increased influx of blood to the part; but as the inflammation advances so does the swelling, and it then becomes augmented by the deposition either of serum, coagulable lymph, or of pus\*. The swelling produced by either of the two first fluids, remains for some time after the inflammation has subsided, and is only removed by rousing the action of the absorbents.

\* "The degree of swelling, and the distance to which it extends in inflammation, depends partly on the violence of the attack, but chiefly perhaps on the structure of the parts in which it occurs."—THOMSON.



213. I have now discussed the proximate cause of *each* symptom of inflammation, and endeavoured to prove synthetically and analytically that, an “*increased action of the vessels of the part*” is the direct and immediate cause of the four morbid phenomena before described. As this increased action then is the cause of the *symptoms* of inflammation, we should, consistently with the first rule in surgery, adopt those methods which will be calculated to subdue it; and ever keep in view that the pathological condition of the part is “*an increased action of its vessels.*”

#### SECTION IV.

##### *Terminations of Inflammation.*

214. Inflammation has three principal terminations, *resolution*, *suppuration*, and *mortification*: some authors enumerate nine, viz., resolution, adhesion, effusion, suppuration, ulceration, granulation, cicatrization, gangrene, and sphacelus. This arrangement however is useless, as these latter are in fact certain necessary results, from one or other of the three



former, and as it were only modifications of them.

215. 1st Resolution. When the inflammatory action *gradually* subsides, and the three first morbid phenomena become evanescent, we pronounce that the inflammation has terminated in resolution; which is, as the term implies, a dissolution or a dissolving of the disease, and by it we mean that all morbid action has subsided, and that the part is more or less restored to its original functions and to its natural and healthy condition. It is our duty of course in every instance to use our utmost endeavours to bring about this desirable and salutary termination of inflammation; but towards its accomplishment the remote cause, if it still exists, must first be removed, and till this is done, the methods adopted to promote the resolution of the inflammation will have very little effect. Then our attention must be directed to the removal or subduction of the proximate cause, (213.) the nature of which I have fully discussed in the preceding paragraphs, and which I have proved to be “*an increased action of the vessels.*” Whatever is to be adopted, there is but



one simple object to be accomplished, viz., to diminish this increased action, which of course depending upon the influx of blood to the part, produces in it the morbid sensibility. Therefore, before we attempt to have recourse to any thing, we shall first consider what tends to keep up this diseased action; secondly, what will most effectually diminish it; for upon the removal of the former, and the adoption of the latter, every thing depends. (168.)

216. As heat promotes the action of vessels, facilitates the influx of blood to a part, and thus increases its morbid sensibility, it should as much as possible be abstracted. All the morbid phenomena are produced by, and depend upon, the quantity of blood in the part: therefore whatever will lessen it, will contribute towards the subduction of the inflammation. There are two methods of accomplishing this, either by locally detracting blood, or by applying cold. Unless the inflammation be violent, or be situated in a delicate or important viscus or organ, the latter remedy will be found generally sufficient; but when the inflammation runs high, and does not readily yield to the cold applications, the



former will be found a powerful auxiliary, provided it is not *terminating* in suppuration.

217. By the application of cold, or in more philosophical language, the abstraction of caloric, we diminish the capacity or size of the vessels—we diminish their increased action—we diminish the velocity of the blood—we diminish the quantity of the blood in the inflamed part—and finally, we diminish the morbid sensibility, and consequently the cause of all the morbid phenomena. A free evaporation should be unremittingly kept up from the surface, by linen cloths moistened in a cold lotion, in which some of the following salts have been dissolved, viz., acetate of lead, muriate of ammonia, sulphate of lime; or a lotion composed of equal parts of vinegar and water will be found to answer extremely well\*.

\* Caloric must be abstracted *directly* from the part affected, not from any of the neighbouring parts. The object being to diminish the quantity of the blood in the *part itself*; if we apply cold lotions to any part in the vicinity, this object will not be accomplished, but the very reverse, for by diminishing the blood in the neighbouring parts, we drive it towards the affected part. On this account, in inflammation of the lungs, or bowels, cold applications would be highly injurious as not be-



218. In some cases, to these topical remedies, a general antiphlogistic regimen must be added: this of course must depend upon the violence of the affection, the importance of the viscus or part affected, and the constitution of the individual; and it should be regulated according to the directions given elsewhere.

219. The following important question should now be considered, viz., *how long is this plan to be persevered in, or how long are we justified in adhering to the antiphlogistic regimen?* my answer is, either until the inflammation terminates in resolution, or until we find that the morbid action cannot be subdued, but that the suppurating process is commencing. There is no difficulty in ascertaining the former circumstance, but I acknowledge that the latter requires considerable attention to determine it. It is very easy to discover when suppuration has actually commenced, but this is not the point in question, the desideratum being to decide when the inflammation is *about* terminating in suppuration;

ing applied to the viscera themselves. But these facts are no exceptions to the general application of cold to inflamed parts.



for after this period every attempt to resolve the inflammatory action, will only be productive of mischief. It is equally as impossible to lay down any precise rule as to the time when we should desist from the cold applications, as it is to determine when the operation for strangulated hernia should be performed, or the exact quantity of blood that should be taken in an inflammatory affection. All must depend upon a variety of circumstances ; and I must acknowledge that I consider every attempt to give a precise rule in such and similar cases, productive of much evil, being calculated to divert the attention of the practitioner from the only true principles which should regulate his conduct, and to cause him to commit serious, and not unfrequently, fatal errors.

220. In many instances, a practitioner may be called in when it would be judicious forthwith to promote the process of suppuration ; in other cases, he may be justified in endeavouring for many hours, nay for days, to bring about resolution. All the directions that I can possibly give, are included in the following remarks : first, it is reasonable to expect



that the symptoms of inflammation will at all events become stationary after a short time; that is, that our antiphlogistic regimen should prevent them from increasing, if it does not render them less violent. Secondly, while they are thus as it were suspended, we can with every degree of propriety persevere in the same course. Thirdly, if the symptoms continue to increase while we are adopting the depleting plan, if the type of the fever becomes in the smallest degree altered—if the pulse becomes fuller, with perspiration breaking out on the surface of the body, while the sharp pain in the part *gradually*\* changes for a dull heavy throbbing one, the sooner we alter our *local* treatment the better. I lay the emphasis upon the word *local*, because an alteration in our topical applications should always precede a change in our general treatment.

221. *The process of suppuration* is the second termination of inflammation: it consists in the formation of a peculiar matter

\* I say the symptoms of acute inflammation *gradually* change when it is terminating in suppuration, in contradistinction to the *sudden* subsiding of them when terminating in mortification; which, with other circumstances noticed under the latter head, will be found sufficient diagnostics.



called *pus*, by means of which artificial secretion, nature, unable to bear up against the morbid action just described, relieves herself and unburdens the loaded vessels; without which, disorganization of the part would inevitably take place, and the termination would be *mortification*.

222. Various theories have at all times been advanced concerning the source of pus: some believing it to be produced by the conversion of extravasated blood; while others supposed it to proceed from the dissolution of muscular and tendinous fibre. But it is now well known to be a pure secretion formed by a peculiar action of the vessels of the part, in a manner analogous to every other secretion in the animal machine. This secretion is most generally preceded by acute inflammation, in the very commencement of which coagulable lymph is formed that consolidates and unites the neighbouring cellular substance\*. When inflammation is about terminating in suppuration, the centre of the

\* Chronic abscesses excepted. Pus is also formed by mucous membranes, without the above secretion being formed, and also without ulceration; but serous membranes always first secrete coagulate lymph.



inflamed part becomes peculiarly vascular, the vessels secrete pus, which augments and presses upon all sides that more or less yield: then that part of the consolidated cellular membrane which is in contact with the matter constitutes the sac, the internal part of which becomes a secreting and an absorbing surface. There is no difficulty whatever in ascertaining the formation of matter provided it be situated superficially; but when deeply situated, either beneath a strong fascia, or in any of the viscera, the diagnosis is rendered sometimes peculiarly uncertain. We must in these latter circumstances rely entirely upon general and constitutional appearances. These will of course be rendered much more certain by considering the nature of the process, the pathological condition of the body under such circumstances, and the effect which a relief of overburdened vessels must produce upon the system at large. Hence the inflammatory fever becomes more moderate: to the hot dry skin, succeeds a cool and moist surface of body—to the parched mouth and tongue, succeeds a moist one: the sensation of cold becomes sometimes so very considerable, as to occasion



rigors ; and in fact all the morbid phenomena become for the time so relieved, that there generally is a very obvious mitigation of suffering.

223. As soon as we perceive by the nature of the symptoms that suppuration is about to take place, the sooner we change our cold applications the better : the vessels are now to be relaxed as much as possible, which heat and moisture are best calculated to accomplish ; for while cold constricts and diminishes the capacity of the vessels, heat enlarges them, and thus promotes the formation of pus. These applications should be persevered in until the matter be perfectly formed, and in fact until healthy granulations are produced. The art of surgery must now interfere, and facilitate the exit of the pus : the period when this is to be done will depend upon the situation of the matter, and various other circumstances, which I shall defer noticing until a future period.

224. The third and last termination of inflammation is in mortification, which implies nothing less than that nature has been com-



pletely conquered, and sinks in the contest. Many who have written on this subject, and many who treat mortification at the present day, appear to forget, or really do not consider, that a mortified part is *dead*; and further, they also too generally treat all species of mortification upon the same principle. I shall attempt, however, to prove that there are a variety of species of this affection which are distinct in their nature, cause, symptoms, and treatment, and which cannot be confounded together, without leading to an erroneousness of practice vastly detrimental. Let me not be misunderstood, a mortified part is dead, no matter what produces it, and as it respects the applications to the part itself, it is perfectly immaterial—hot or cold, stimulating or soothing, applications have the same effect upon a *mortified part*—that is, no effect at all; but it is quite otherwise with respect to the neighbouring parts—these are still alive.

225. There are two stages in mortification, viz., *gangrene* and *sphacelus*; the former, strictly speaking, is only a degree of the latter, but it by no means always precedes, nor does gangrene invariably terminate in spha-



celus. While there is any warmth or sensibility in a part, even in the smallest degree, we term it only gangrene; but when *all* sensibility and heat cease to be present, and the part becomes flaccid and of a brown or black colour, we then pronounce it to be mortified, sphacelated or dead, which terms are all synonymous. There are three principal species of mortification:—

1st, That produced by increased action.

2d, That produced by an insufficient quantity of blood sent to a limb, caused either	{	1st, By general debility.
		2d, By ossification of an artery.
		3d, By a tumour pressing against an artery.
		4th, By a ligature on ditto.
		5th, By corrupted rye.

3d, That produced instantaneously, caused	{	1st, Either by the violence of the body acting.
		2d, By extreme cold.
		3d, By caloric.
		4th, By caustic.

226. The first species of mortification is that produced by violent increased action, and is necessarily preceded by inflammation; the vessels of the part having been distended and in the highest state of activity, and being no longer able to sustain the morbid action going on, become altered in their nature; become incapable of conveying blood; and this



becomes the cause of the disorganization. When this occurs, nature becomes as it were relieved as she is when inflammation terminates by suppuration, in both cases all the violent symptoms of increased action cease for a short time. Sometimes the very kind of injury or the degree of action will enable us to foresee this termination, and therefore to form a tolerably correct prognosis. When the symptoms of acute inflammation, notwithstanding our local and general treatment, advance rapidly to a high pitch—the pain, redness, tumefaction, and tension, becoming considerable, with constitutional disturbance and excessive irritation, we then have good grounds for dreading this unfavourable termination. These morbid phenomena arise as it were to an acmè, and then, without any diminution in violence or without becoming for an instant stationary, *suddenly* subside. To the pain a total insensibility of the part succeeds. To the increased heat, coldness—to the swelling and tension, a flaccid state of the parts—and lastly, to the redness, a dark brown or black colour. The general inflammatory symptoms are for the time relieved; and the individual generally experiences agreeable, but



too often deceptive, sensations. The manner in which this species occurs must now be clear, as well as the pathological condition of the neighbouring parts, and of the part itself, and also the proximate cause of the *symptoms* of mortification.

227. The second species of mortification is that produced by genuine debility, or by a deficiency in the due *quantity*, or proper *quality*, of the blood sent to a part. This species has also been termed the chronic, or dry gangrene, and is produced by a vast variety of remote causes :—

*First*, a deficiency in that quantity of blood which a limb has been accustomed to receive, and which may be caused, either by any of the circumstances mentioned in (225.) and which shall be separately considered; or,

*Secondly*, By an alteration in the *quality* of the blood, from the action of peculiar substances taken into the system.

The persons most exposed to attacks of the first kind, are those who have lived too voluptuously, but have, either from necessity or choice, changed their manner of living for a more frugal regimen. It generally commences



in the lower extremities, unpreceded by any remarkable pain, but frequently accompanied by a general uneasiness in those parts. It first makes its appearance by a bluish or blackish spot on one of the toes, which gradually spreads, until the individual be destroyed, or the member be removed. But as the celebrated Mr. Pott has accurately described this species, from whom it has been termed "Pott's Mortification," I shall content myself with transcribing his words on this subject. He says—

"I mean that particular kind which, beginning at the extremity of one or more of the small toes, does in more or less time pass on to the foot and ankle, and sometimes to a part of the leg; and in spite of all the aid of physic and surgery, most commonly destroys the patient.

"It is very unlike to the mortification from inflammation, to that from external cold, from ligature or bandage, or to that which proceeds from any known and visible cause: and this as well in its attack as in its process. In some few instances it makes its appearance with little or no pain; but in by much the majority of these cases, the patients feel great un-



easiness through the whole feet and joint of the ancle, particularly in the night, even before these parts show any mark of distemper, or before there is any other than a small discoloured spot on the end of one of the little toes.

“ It generally makes its appearance on the inside, or at the extremity of one of the smaller toes, by a small, black, or bluish spot: from this spot the cuticle is always found to be detached, and the skin under it to be of a dark red colour.

“ If the patient has very lately cut his nails, or corn, it is most frequently, though very unjustly, set to the account of such operation.

“ Its progress in different subjects, and under different circumstances, is different; it is slow in some, and long in passing from toe to toe, and from thence to the foot and ancle; in others its progress is rapid, and horribly painful. It generally begins on the inside of each small toe, before it is visible either on its under or upper part; and when it makes its attack on the foot, the upper part of it first shews its distempered state by tumefaction, change of colour, and sometimes by vesication; but wherever it is, one of the first marks



of it is a separation or detachment of the cuticle.

“ Each sex is liable to it; but for one female in whom I have met with it, I think I may say that I have seen it in at least twenty males. I think also, that I have much more often found it in the rich and voluptuous, than in the labouring poor; more often in great eaters, than in free drinkers. It frequently happens to persons advanced in life, but is by no means peculiar to old age. It is not, in general, preceded or accompanied by apparent distemperature, either of the part or of the habit. I do not know any particular kind of constitution which is more liable to it than another; but as far as my observation goes, I think that I have most frequently observed it to attack those who have been subject to flying uncertain pains in their feet, which they have called gouty, and but seldom in those who have been accustomed to have the gout regularly and fairly. It has by some been supposed to arise from an ossification of vessels; but for this opinion I never could find any foundation but mere conjecture. The common method of treating this distemper is, by spirituous fomentations, cataplasms actually



and potentially warm, by dressings of the digestive kind, as they are called, animated with warm pungent oils, and balsams, &c.; and internally, by the Peruvian bark."—Potts' Surgical Works, Vol. III. p. 186.

228. The proximate cause of this species is a debility in the action of the vessels of the part, a cause the very opposite to that of the first kind of mortification I described. The reason why persons who have lived freely are more exposed to this affection than others is, that their extremities having been accustomed to a plentiful supply of rich stimulating blood, they feel the loss of it more than those who have always lived regularly. If two persons, one a glutton and the other a moderate liver, be exposed to privations, the latter will feel much less, and bear up against his misfortunes much better, than the former. The reason of this must be obvious. It is then the very same respecting the predisposition, if I may be allowed so to term it, that exists in some persons to this disease: Luxury, as the parent of gluttony and indolence, may be considered its predisposing cause.



229. In that species of mortification which is produced by the ossification of an artery, or by a ligature on it, or by a tumor pressing against it, that part of the limb which is situated at the greatest distance from the heart, is the first affected; and this is invariably the case with gangrene produced by debility, or by a deficiency in the natural quantity of blood sent to the part. In those cases, the limb first loses its natural temperature, then its sensibility, it then becomes of a whitish or pale yellow colour, its cuticle becomes detached, and afterwards it emits a cadaverous odour, and changes to a dark brown or black colour.

230. That kind produced by an alteration in the *quality* of the blood, in consequence of some substance having been taken into the system, was first noticed by M. Dodard, in the year 1676. That gentleman attributed this species of gangrene to the bread made of corrupted rye, called by the French "*ergot*," or the cockspur in rye. Our country has not hitherto been visited with this calamity; therefore we can only describe it from the continental reports. It has appeared in various parts of the Continent, particularly in France, where



whole families have been destroyed by it. It most frequently occurs after moist seasons, in which the rye becomes so altered in its nature, that it proves large, turns black, and possesses a peculiar horny appearance and feel. M. Dordard says, that those who made use of bread in which there was even one-fourth of this rye, were frequently attacked with gangrene of their extremities, attended with but little fever, inflammation, or pain; which destroyed the limb, when becoming dead it separated from the body. The part affected became at first insensible and cold, afterwards dry, hard, and withered\*.

231. The third and last division of mortification is that unpreceded by inflammation or debility, and produced by external causes, either violence, or by powers incompatible with organization: the degree of which powers is so great, that they do not rouse the parts into action, but do actually destroy or kill them at the moment. Thus violent bruises frequently destroy the parts instantaneously: also a spent cannon-ball striking a limb, ex-

\* Thomson.



tinguishes life in it; or carrying off a limb, kills the neighbouring parts. The effect of very low temperature in freezing a living part may be classed under this head.

## SECTION V.

### *Treatment of Mortification.*

232. In describing the treatment of mortification, the utility of the arrangement I have just made will be apparent. Many who have written on this extensive subject (a mere outline only of which I have given), and many who treat it at the present day, appear to forget, 1st, That a mortified part is actually dead; and, 2dly, That there are more species than one. There appears great ambiguity in the treatment of mortification, which I conceive may, in a great measure, be obviated by simply attending to the cause which produced it. When a part is mortified, nothing can restore it; therefore our whole attention must be directed to the condition of the living parts in its neighbourhood. In treating any of the species of this affection, it will be of the first



importance to consider what is the pathological condition of the mortified part, and of the parts in its vicinity; the former is dead, without vitality—an inorganic mass—the state of the latter depends entirely upon the exciting cause.

233. The first kind of mortification is that produced by inflammation, by increased action of the vessels of the part; the vessels before this occurs are in an active condition, similar to that before suppuration takes place, only in a much greater degree. Nature, in mortification, is relieved by the part becoming dead; and in suppuration, by the vessels becoming unburdened; so that “the spreading of mortification,” as it is commonly termed, is owing *entirely* to the state of the adjoining parts. The object then to be accomplished in the treatment of mortification is to prevent the affection from spreading: this can be done only by removing the *proximate* cause, which I before stated to be, in this species, the highest degree of action of the vessels. Whatever therefore was, previous to the mortification, calculated to prevent its occurrence, must of necessity possess equal power in checking



its progress, not by acting on the dead but on the living parts. Further, whatever was calculated to increase the inflammation in the first instance, will of course tend to augment it in the latter, and of necessity to produce more mortification, or, as it is improperly expressed, to cause it “*to spread*.” What then is to be thought of those gentlemen who advise *indiscriminately* hot spirituous applications to a mortified part? In the first place, they appear to know very little about the condition or nature of parts under such circumstances; or if they know much, their practice is not influenced by their knowledge. Secondly, the fatal termination of many cases of mortification, which they *scientifically* say “*cannot be checked*,” may justly be attributed to the mode of treatment; for I assert, without fear of contradiction, that nothing can possibly be more calculated in this species of mortification (which occurs ninety-nine times out of a hundred) to increase the destruction of the parts, than the before mentioned application. Let any one prove to me, that the theory I advanced respecting the proximate cause of mortification is incorrect, and then I will acknowledge the above assertion to be wrong; but while I



know that increased action of the vessels of a part is the proximate cause, I can never view the above remedies but with abhorrence. I request the reader to recollect, that I do not say *hot spirituous applications* are improper in every kind of mortification, I only allude to the species of the affection now under consideration.

234. After what I have just said, but little remains for me to add on this part of our subject. As the sphacelated or mortified part therefore is *dead*, cold or hot, soothing or stimulating, applications *to it* are all the same; nothing can produce an alteration or an amendment in a *dead* part. Whatever therefore we order, must be with a view of acting upon the living parts, so that in the present instance, while they are labouring under the highest degree of arterial action, morbid sensibility, &c., in fact high acute inflammation, our duty will be to treat it upon the common principles laid down in (216, &c.) In proportion as we subdue this increased action, do we put a check to the further progress of the mortification. (217, 218.)



235. This plan is to be persevered in till the *adjoining* inflammation terminates by suppuration, (219.) and then the treatment is to be regulated according to the directions given in \* (221.) Should there afterwards be much general debility, the method of treatment does not differ from that of *debilitas genuina*. (163). Notwithstanding all that has been from time to time written on the subject of mortification, implying that its treatment is very difficult, I trust the reader will no longer conceive that there is attached to it any such ambiguity. The first stage of this species comes under the head of inflammation, and is to be treated according to the antiphlogistic regimen; while the second stage belongs to debility, and is to be treated with tonics: where then is the difficulty, the ambiguity, and the uncertainty in the treatment of this affection so generally believed?

236. Before concluding this part of the subject, I must notice a direction found in most of the best Surgical books, but of which I beg leave to remark that it is unscientific,

\* The best species of poultice in this stage of the affection is the fermenting. See Lond. Phar.



erroneous, and injurious. The direction I allude to is the following, viz., “that when there is necessity to remove a mortified limb, we should *always* wait for a line of separation between the living and the dead parts.” Now this direction is only applicable to one species of mortification, viz., that arising from an internal cause; and the reason why it is even in this case applicable, is because we know not the powers of nature till this line be formed; and therefore there would be no use in operating on an unfortunate person, whose strength would not be sufficient to heal the wound. I do not by these remarks pretend to assert that we should forthwith, upon mortification occurring, remove a limb: who would dare at the present day operate on inflamed parts? but as soon as the inflammation in the neighbouring parts has subsided, then, if it be judicious to remove the limb at all, the operation should be performed.

237. The second species of mortification is that produced by an insufficient quantity of blood in the limb; the varieties of which (224.) depend entirely upon the nature of the exciting cause—the proximate one being the same in all.



238. The first variety of this second species I fully described in (228.), and proved how the proximate cause was *debilitas genuina*, or an *insufficient* action of the vessels of the parts. This being the pathological condition of the limb the indication must be obvious, viz. to restore tone to the neighbouring parts; and in proportion as we do this we check the progress of the mortification. When this species attacks an individual, which is easily known by considering his age, constitution, previous habits, &c., and by attending to the nature of the local and constitutional symptoms (227.), we should do every thing in our power to remove the *proximate* cause, (228.) which is to be accomplished by ordering general (163.) and local tonics (169.) The former should always be very powerful, for reasons before noticed; (228.) stimulants should be freely administered in proportion to the necessity: wine will not always remain on the stomach, or agree with our patient; brandy and the aromatic spirit of ammonia, will be found good substitutes. We should recollect that the previous habits of our patient were those of a free liver, and consequently the stimulants are to be proportionably powerful:



sometimes it will be necessary to allow half a pint, or a pint of brandy in the twenty-four hours. Bark should also be given, and when united with an aromatic there will be a greater probability of its remaining on the stomach. (165.) I should not omit mentioning that opium has been very much extolled by some practitioners, particularly by Mr. Pott. But I must confess I have not found it to possess any peculiar virtues in this affection, except that of a good anodyne medicine. I have ordered it in this species, but simply to procure rest and allay irritation; and for such purposes it should not be omitted\*.

\* While abroad, the following remarkable case of Potts' Mortification came under my care:—Mr. C——, aged sixty-five, in the earlier part of his life, was a free liver, fond of gratifying his palate to excess; but latterly, from a desire as he thought, of prolonging his life, he lived very abstemiously. His right leg and foot were, for some time before I saw him, subject to *flying pains*, with a superficial ulceration which occasionally dried up. I was consulted in the month of November, 1821, for a general tumefaction of the foot and leg, accompanied with an erysipelatous blush, vesicles, and much pain. I at once pronounced the hazardous state of my patient's life; ordering the limb to be surrounded with a fermenting poultice, and that he should be put upon a tonic and stimulating regimen; at the same time requesting that some other medical gentlemen might be in attendance with me.

By the effect of these remedies—bark, wine, brandy, and opium, nature appeared to rally a little, and a red line sur-



239. In ordering the local applications, the *proximate* cause, or the pathological condition of the part, should be duly considered. A debility, or *insufficient* action of the vessels in the part is its pathological condition; the indication then in this species must be as obvious, although the very opposite, as in the mortification produced by increased action. In the former, there being a want of due action, every thing to restore tone to the parts should be adopted; in the latter, there being over action, every thing ordered should be to diminish it. Thus, if we apply to the extremity affected with the species of mortification now under consideration (that pro-

rounding the leg about its middle, shewed the boundaries of the mortification; but the whole of the extremity was oedematous. I proposed removing the limb; the medical gentlemen at first opposed the measure, because they supposed he would actually die on the table, his weakness was so great. But upon my laying before himself the utter impossibility of his surviving in his present state, and that the only chance of saving him was by the operation, he consented: and so did my colleagues, upon my stating that I would take the *whole* responsibility upon myself. On Sunday, the 18th, I amputated the limb *above* the knee, and though a portion of the common integuments sloughed off in the course of a week, yet he ultimately was restored to perfect health; and in a letter of his to me, now before me, he observes, *the operation has added twenty years to my life.*"



duced by debility,) cold lotions, which are of the greatest utility in that produced by increased action, we augment the disease, and of course diminish the chances of a cure.

240. From the very commencement then of this species, we should do all in our power to support the remaining life in the limb, by promoting the due circulation of blood in it. As cold diminishes the action of vessels, so heat promotes it; warmth, by means of poultices, is to be applied to the parts; and the fermenting poultice will be found the most beneficial. So far is the Science of Surgery connected with the treatment of the limb—the rest must be left to the Art to accomplish.

241. The other varieties of this species, (227.) whether produced by a ligature on, or by an ossification of, or by a tumor pressing against, the main artery of the limb, are all caused in the same way, viz., by an obstruction of the free circulation of blood in the part.

242. In the treatment of these kinds of mortification, the cause must if possible be re-



moved; if this cannot be done, as where there is an ossification of the principal artery; or that it would be injurious to remove it, as when an artery is tied for aneurism, the treatment is to be regulated according to the principles in the preceding paragraph. The circulation in the extremity is to be promoted as much as possible, and this will be best effected by warm applications. After tying an artery for an aneurism, mortification, not inflammation, is to be dreaded; and of course we should guard against it by promoting the circulation in the anastomosing branches: always then after this operation, the limb should be kept for some time surrounded with warm applications, until we perceive by the natural heat and sensibility of the limb returning, that the circulation is freely carried on by the collateral branches. This species of mortification is the principal evil to be dreaded after this operation; but it is much more likely to occur when the artery has been secured for a recent wound, (in which case the other vessels have not had time to be adapted to the necessity,) than when it has been performed for an aneurism of some time standing.



243. The next kind of mortification is that described in (230.) as produced by corrupted rye: as to the treatment of this malady, I can say but little, and nothing from my own experience. From the accounts we possess of this affection, it would appear that when once a person is attacked with it, it is so rapid in its progress, that nothing can check it. Were I to attend a case of this species, I would do all in my power to carry this vegetable poison (for such the corrupted grain must be termed,) out of the system, by exciting the action of the various glands in the body; at the same time restoring tone to the system in general. The indications are two; first, to remove the exciting cause—the poison; and secondly, to support the powers of nature.

244. The third and last species of mortification is when the parts are instantaneously killed by the powers acting. (231.) First, the exciting causes are to be removed; secondly, our attention must be directed to the condition of the neighbouring parts, and treat them according to their pathological condition. If the inferior portion of the limb be so destroyed, that we judge it impossible to restore any part



of it to its natural condition, the sooner we remove the extremity, *after the person has recovered from the shock*, the better: by so doing, 1st, We anticipate inflammation; 2dly, We form a useful and healthy stump; 3dly, and lastly, We save the individual the pain, trouble, and danger, of a tedious suppuration, &c.

## SECTION VI.

*On the Nature of Erysipelas.*

245. I have in the preceding part of this chapter discussed the nature, terminations, and treatment, of local phlegmonous acute inflammation; I shall now make a few observations upon what is termed erysipelatous inflammation. While phlegmonous inflammation attacks all parts of the body, this species is principally situated in the common integuments; hence it may be properly termed a cutaneous affection, which is characterized by little tumefaction, by a bright red colour, and by sometimes being accompanied with vesicles, and sharp lancinating pains. The redness dis-



appears on pressing the part with the finger, but instantaneously returns upon the pressure being withdrawn. A variety of species have been described by authors\*; but as I consider them all only modifications of the same affection, produced by the same cause, and requiring the same method of treatment, I shall not trouble the reader with noticing them: he may gratify his curiosity by referring to any of the works quoted below. The causes of this affection may be divided into the predisposing and the exciting. Under the latter head may be enumerated all those before mentioned (201.) as the remote causes of phlegmonous inflammation; and the former is nothing else than nosocoilia. (141.)

246. It is worthy of notice, that the most ancient physicians were aware that erysipelas was intimately connected with a deranged state of the hepatic organs. Although we find some absurdities in their theories, yet much truth is blended with them. The Greeks believed that phlegmon was produced by the red blood; erysipelas by the bile; œdema by

\* Hippocrates, Galen, Ætius, Paulus Eginetus, Oribasius, La Motte, Cullen, Desault, &c.



pituitous, and cancer by the atrabilious, fluid. Now we know that bilious habits are most exposed to this species of inflammation; so that if two persons receive an injury, the one whose system is disordered, or his chylopoietic viscera out of order, will most generally be attacked with erysipelatous inflammation, while the other will be only affected with phlegmonous.

247. This local affection is so connected with the system, and so entirely depends upon the state of the digestive organs, that local applications have but very little effect until these organs be restored to their natural condition. The great diversity of opinion respecting the most proper local application to be applied to this affection that exists amongst medical men, may be attributed to this circumstance. Some recommend covering the part with flour or powdered chalk; others prefer merely surrounding the limb with warm flannels; while others always apply cold lotions. Men have also differed respecting the most judicious constitutional treatment. Celsus used to detract blood in almost every instance: while Ætius always recommended cathartics;



and this practice appears also to have been adopted by Galen. Paulus Æginetus preferred the use of the lancet. Orabasius was a great advocate for the use of antibilious medicines. Thevenin, Paré, Richter, Cullen, and the most celebrated men of the present day, all recommend those substances which are calculated to evacuate the contents of the intestinal canal—to rouse the dormant action of this tube, and to promote the healthy secretion of the glandular viscera of the abdomen.

248. From these remarks I think we may safely come to the following conclusions:—  
 1st, That erysipelas occurs in those persons whose digestive organs are disordered, and consequently labouring under nosocoilia; (141.)  
 2dly, That as the disease depends upon this circumstance, we should first remove this predisposing cause by the free use of cathartics; (132, &c.)  
 3dly, That sometimes it is accompanied with considerable inflammatory action, and of course requires the antiphlogistic regimen to be adopted\*; 4thly, That erysipelas, abstractedly considered, is not in any way what-

\* With the exception of *local* blood-letting, as wounds in parts affected with erysipelas, are apt to become gangrenous,



ever a species of inflammation, but that inflammation frequently accompanies it. When this occurs, as will be known by the symptoms of increased action, (193.) the remedies calculated to diminish the action, (215, &c.) should be adopted for its removal, but not with any view of curing the erysipelas: this latter is to be eradicated by the use of antinosocoiliatic medicines alone; (133.) 5thly, These two affections should as much as possible be kept separated in our minds, and so should their respective treatments; by this means the remedies to be adopted, and the *modus operandi* of each remedy will be simple and obvious; 6thly, and lastly. That local applications, however they may diminish the accompanying inflammation, have no effect whatever on the disease itself: therefore these should be adopted, as if there were no erysipelas present.

249. Consistently with the tenor of this book, I should now describe the pathological condition of the system when this affection is present; and this I would fully enter into, had I not done so in other parts of it, under the heads of Nosocoilia, Debility, and Inflammation. I wish to be clearly understood on this



subject; that which is at the present day commonly called “erysipelatous inflammation,” I consider as composed of two distinct morbid conditions; first, that action which produces the morbid phenomena characteristic of erysipelas, and which *is not* increased action, but is produced in nosocoiliatic habits; and the second, which is increased action, and constitutes inflammation. The former, which sometimes occurs unaccompanied by the latter, requires, as I observed before, simply the anti-nosocoiliatic regimen for its removal; and the latter the antiphlogistic regimen, regulated according to circumstances. (220.)



## CHAP. V.

### SECTION I.

*The Nature and Treatment of those Affections  
which most frequently attack Mankind.*

250. **H**AVING finished in the preceding part of this work the consideration of nosocoilia, (92.) debility, (155.) and inflammation, (190.) I shall now proceed to the discussion of those diseases or morbid actions which attack mankind most frequently, and shew how far their general or constitutional treatment may be referred to the above three principal conditions of the system. The first class in Cullen's Nosology is termed Pyrexiaë, or Febrile Diseases, which contains forty different affections \*: these are considered by the ma-

\* See Dr. Cullen's Nosology.

Class 1. PYREXIA.	1st. Tertianæ.	2d. Continuæ.
Order 1st.	2d. Quartana.	4th. Synocha.
Febres.	3d. Quotidiana.	5th. Typhus.
1. Intermittents.		6th. Synochus.



jority of the Profession as distinct in their nature, cause, and treatment. I expect to prove the very reverse of this, that is, instead of their being distinct diseases, produced by various proximate causes, and requiring a variety of methods for their treatment, that they are, with a few exceptions, only modifications of the same state of the system—hence their treatment, which is included in the antiphlogistic, tonic, and antinosocoiliatic regimens, are the same, differing only in degree, not in nature.

251. I purposely omitted, in the preceding chapter, the description of symptomatic in-

Order 2d.	20. Hysteritis.	32. Urticaria.
<i>Phlegmasiæ.</i>	21. Rheumatismus.	33. Pamphigus.
7. Phlogosis.	22. Odontalgia.	34. Aphtha.
8. Ophthalmia.	23. Podagra.	————
9. Phrenitis.	24. Arthropuosis.	Order 4th.
10. Cynanche.	————	<i>Hæmorrhagiæ.</i>
11. Pneumonia.	Order 3d.	35. Epistaxis.
12. Carditis.	<i>Exanthemata.</i>	36. Hæmoptysis.
13. Peritonitis.	25. Variola.	37. Hæmorrhoids.
14. Gastritis.	26. Varicella.	38. Menorrhagia.
15. Enteritis.	27. Rubeola.	————
16. Hepatitis.	28. Scarlatina.	Order 5th.
17. Splenitis.	29. Pestis.	<i>Profusiva.</i>
18. Nephritis.	30. Erysipelas.	39. Catarrhus.
19. Cystitis.	31. Miliaria.	40. Dysenteria.



flammatory fever, because I intended to discuss it as connected with the present subject: it matters very little whether it be idiopathic or symptomatic fever, the affection is the same in its nature, symptoms, treatment, and consequences.

252. When a local inflammation is situated in some important part, or when it becomes excessive, the whole system is brought under the influence of the local action, so as to exhibit a number of morbid phenomena, and to constitute what is termed symptomatic inflammatory fever. When these morbid phenomena are unpreceded by any local affection, the disease is termed Synocha.

253. The symptoms of local inflammation (192.) may be considered those of symptomatic inflammatory fever in *miniature*; and the proximate cause of both may be also considered the same: so that a fever is nothing more than a general inflammation\*.

\* We find in the works of Dr. Gorter, the following remarks: He says, "that the proximate cause of inflammation consists in an increased vital action of some particular artery or arteries, by which the blood is propelled with greater force than usual,



254. The symptoms of synocha are the following:—a hard quick pulse, generally one hundred and twenty in the minute; a hot dry skin; parched tongue and mouth, with a total loss of appetite; urine scanty, and high coloured; bowels constipated; great thirst; and great anxiety. These morbid phenomena sometimes are accompanied with violent pains in the head, and delirium.

255. If any organ or viscus in particular be affected, to the above catalogue will be added local morbid phenomena: thus if the brain be particularly attacked, there will be all the symptoms of an increased action of the ves-

into the communicating lymphatic and colourless vessels.”—  
 “Stimuli may increase the action of a particular artery, without producing any change whatever in the action of the heart.”  
 “When the increased action takes place in all the vessels of the body, fever is produced; but when the increased action is confined to one or to a few vessels only, inflammation is the consequence.”—“The heart cannot produce a greater velocity in one branch of an artery than in the other branches which are derived from the same trunk; a thing, however, which we see takes place in inflammation, so that we must allow the blood-vessels themselves to be endowed with a certain vital action, by which the fluid they contain is impelled in inflammation with an unusual degree of force.”—*Compendium Medicinæ et Chirurgiæ Repurgata.*



sels of the part, as a flushed countenance, excessive headache, violent throbbing of the carotid and temporal arteries, intolerance of light and sound, redness of the eyes, and delirium: again, if the lungs be the seat of the principal action, there will be violent pain in the chest, difficult breathing, short respirations, and a cough.

256. The symptoms of synocha may be referred to a morbid alteration produced in the secreting organs by increased action; so that all the secretions in the body are either totally suppressed \*, or diminished in quantity †; to this alteration in the secretions, the thirst, the loss of appetite, the hot dry skin, the parched mouth, the constipation of the bowels, may be attributed.

257. This alteration in the secretions should then be considered as the *proximate* cause of these morbid phenomena (254.) to which in the aggregate, we give the term *fever*, and the proximate cause of this alteration in the secretions is the same (253.) as the proximate

\* The perspiration, saliva, gastric juice, &c.

† The urine, the bile, &c.



cause of the symptoms of local inflammation, (192.) viz., *an increased action of the vessels*: this then is the pathological condition of the system in fever, and upon this the scientific treatment of fever should be built.

258. The methods adopted for subduing inflammatory action are included under the head of the antiphlogistic regimen. These consist of, 1st, Bleeding; 2d, Purging; 3d, Diaphoretics; 4th, Opium; and, 5th, Low Diet.

259. *Bleeding*. The detraction of a portion of that very fluid, an alteration in which, either in quantity or in quality, may be considered as the proximate cause of the morbid phenomena we wish to subdue, and upon which also the "*increased action of the vessels*" depends, must appear at once as the most certain, efficacious, and quickest method of accomplishing our object. Blood may be taken either directly from the part affected, or from the system; when there is determination of blood to any particular viscus or organ, both methods may be with considerable advantage put in practice. If, for instance, the brain or the eye



be particularly affected, blood taken from the temporal arteries, or from the external jugular veins, would be highly proper. There are two circumstances connected with this subject which demand attention, viz., 1st, The method of taking blood; and, 2dly, The quantity necessary to be detracted. There are two ways of letting blood, either slowly by a small orifice, or suddenly by a large one. The latter method is far preferable to the former, for many reasons; first, our object in detracting blood is not *merely* to lessen its quantity in the system, but more particularly to restore the circulating fluids to their natural or healthy equilibrium. We must suppose, in order to see the importance of this subject, that there is a morbid alteration in the due quantity of blood sent to the various parts of the body during an inflammatory action: that in the organ or organs particularly affected with inflammation, there is, we will say, four times as much blood circulating through it, as there would be when in a state of health. Our object then must be to diminish the morbid quantity of blood in the part itself. Taking blood slowly will scarcely accomplish this; at all events, a much greater portion must be



lost to do so, than if taken suddenly. Suppose there be twenty pounds of blood in the whole system; that there be six pounds of this circulating through an inflamed viscus in the same space of time that only one pound used to circulate in, when it was in a healthy condition; if we detract a certain quantity of blood slowly, so as to reduce the whole of the blood in the body to eighteen pounds, only about a fifth of the blood in the part itself will be lost; so that although there be little better than five pounds circulating in the part after the operation of bleeding, yet it will bear the same proportion to the whole system as it did before blood was detracted, and consequently no good will be effected. On the contrary, if we take blood suddenly from a large orifice, the circulation in the part affected, being four or five times greater than in the rest of the body, the loss of blood in the part will be proportionally five times greater than that from the system; so that there will be an evident advantage, viz., the quantity of blood in the part itself considerably diminished.

260. The second circumstance in letting blood worthy of attention is, the regulation of



the quantity that should be taken. This must certainly depend upon a number of circumstances: were I to say that sixteen, or that forty ounces of blood should be taken in inflammatory fevers, many cases occur where the former quantity would by no means be sufficient; and other cases where to take the latter quantity would not only be unnecessary but highly detrimental, nay sometimes fatal. The age, temperament, constitution, and sex of the individual; the nature of the organ affected, and the degree of inflammatory action present, are circumstances which should always regulate us. But I beg leave to observe, that the *effect* of the quantity of blood taken upon the system, and upon the morbid action, is by far our best and surest criterion. In cases of violent inflammation, the system must be made to feel the effect of the loss of blood. Hence it will be proper, whenever there is an important organ affected, as the brain, lungs, or stomach, to bleed to syncope; by so doing, we shall frequently give such a check to the inflammatory action, that there will be no necessity for us to repeat the blood-letting.

261. Every part of the antiphlogistic regi-



men that we adopt is with one and the same intent, viz. to diminish *increased action*. Cathartics, when freely given, contribute essentially towards it. The only species of inflammation, in which they are inadmissible, is in enteritis, or inflammation of the bowels; for they, in this case, acting upon inflamed parts, of course aggravate the irritation and inflammation of them, by causing an additional quantity of blood to be determined towards these organs, the very reverse of which we should endeavour to accomplish.

262. It is for this reason that they prove so highly beneficial in inflammation of the brain; for by acting upon the intestines they produce a great discharge into them, and this can alone be effected by a determination of blood to these parts, which of course diverts the circulation from the brain. My observations upon the functions of the large intestines in the note in page 47, should be carefully perused, as therein I endeavoured to point out the different objects in the administration of cathartic medicines, and how the system in an inflammatory condition is benefited by them.



263. Some of the neutral salts dissolved in an infusion of senna are the most proper cathartics in these affections; but should there also be any species of nosocoilia, these medicines should be preceded by one or two doses of the submuriate of mercury, or the blue pill.

264. The administration of diaphoretic medicines is with the same intent, viz. to diminish the quantity of the circulating fluids, and by as it were forcing an outlet, unburden the vessels. However, I have never found diaphoretics of any service until the bowels were well opened; that is, I generally failed in procuring a copious discharge from the surface of the body when the bowels were confined; so that it was only in proportion as I could remove the latter obstruction, that I succeeded in bringing on perspiration. I must therefore acknowledge my scepticism in the utility of giving diaphoretics until the bowels are open; or at all events, without their being united with cathartic medicines.

265. Medical men have always differed in their opinions respecting the most judicious method of relieving or subduing febrile affec-



tions. Some preferred producing a plentiful discharge from the intestinal canal; some from the kidneys; some from the salivary glands; and some from the surface of the body; while others advocated the utility of directly detracting blood. Now I must confess, that while I believe all the morbid phenomena which characterize inflammation, are produced by an increased action of the vessels, which action must depend upon the influx of blood to one or more parts of the body, I consider attacking the skin, the kidneys, the intestinal canal, or in fact any one particular apparatus in the system, except detracting blood, as completely contrary to the first and most important principle in the profession, viz. "*remove the cause.*" Such practice is only attacking the effects not the cause; and however powerful, and of course judicious an auxiliary any of these may be, yet they never should supersede the primary indication of removing the proximate cause, viz. *the increased action.*

266. The use of opium is also a powerful auxiliary in inflammation; it allays irritation, procures rest, alleviates suffering; and by thus keeping in bounds many of the most trouble-



some symptoms, contributes essentially towards a cure. But it ought to be recollected, that it should be given in such doses, and at such times, as that the system will be kept under its influence; otherwise much evil, instead of good, will be the consequence.

267 Low diet is the last, although by no means the least important, part of the antiphlogistic regimen. Except this be attended to, the other departments of the antiphlogistic regimen will avail but little. Persons labouring under any species of inflammation or fever, should cautiously abstain from every article in the *materia alimentaria* that would be calculated to afford strength to the system. Slops, as whey, water gruel, and such like, should constitute their sole diet: in truth, starvation is the proper course for such persons. After these observations, it is scarcely necessary for me to add, that the use of all kinds of animal food, and spirituous liquors, should be prohibited in inflammatory affections.

268. In concluding these remarks upon the constitutional treatment of synocha, I beg the reader's attention, first, to the similarity be-



tween the proximate cause of the four morbid phenomena, which characterize local inflammation, and the proximate cause of the symptoms of fever; secondly, to the similarity between the symptoms of local inflammation, and those of fever; making allowance for those of the former being confined to a part, while those of the latter, are general. But in both we have increased action, increased heat, pains more or less, suppressed perspiration, and morbid sensibility; thirdly, and lastly, to the similarity between the methods of treatment, one object only to be accomplished, viz. the removal of the proximate cause, or the diminution of the increased action.

269. The application of cold to the surface of the body is a favourite remedy of some gentlemen. This was first boldly adopted by the late Dr. Currie, of Liverpool, and since then it has had a very fair trial. I must acknowledge that I view it only as one of those methods described in (265.) which is directed to the subduction of the effects, and not to removal of the cause. Therefore, when compared with blood-letting, I consider it only a secondary means, although in some cases a



powerful auxiliary. The *modus operandi* has been fully explained in (217, 218.)

270. The use of the cold bath in inflammatory cases is interdicted when there is an increased determination of blood to any internal viscus, as the lungs, &c., when the temperature of the body is not above the natural standard, and when the pulse is not hard and frequent. For further observations on the use of the cold bath, I must refer the reader to the judicious directions given in Dr. Currie's work; and while I do so, I beg of him to attend also to what I have said in (265.)

## SECTION II.

### *The Nature of Fevers discussed.*

270. Having terminated my observations upon the nature of the antiphlogistic regimen, and the *modus operandi* of the various means under that head, I shall now proceed to the discussion of those diseases which constitute Cullen's first class, and which I remarked before (250.) are generally considered distinct affections.



271. The first order in this class is divided into intermittents and continued fevers; the general symptoms of which are thus described:—"After shivering, or a sense of coldness, a quick pulse, increased heat, with interruption and derangement of functions, and diminution of strength." These, in fact, are the symptoms of all the diseases in the class *Pyrexiaë*, with a little modification depending upon the particular organ or viscus affected (253.)

272. I said before (256.) that there is no *essential* difference between a fever and a local inflammation, only the former being constitutional, that is affecting more or less the whole system, while the latter only occupies one certain part of the body. But then it should not be forgotten, that as there are more than one species of local inflammation, so there are many varieties in fevers; and further, as the morbid phenomena attending a local inflammation depend upon the cause and the constitution of the individual, as also upon the nature of the part affected; so the morbid phenomena attending fever depend upon similar circumstances, and vary considerably. Finally,



as local inflammation, when it attacks certain structures, produces from its very commencement symptoms of *debilitas ficta*, (173.) so do fevers present, from the same cause, similar symptoms; and this has made medical men divide them (fevers) into *synocha* and *typhus*. But it should be remarked that the local affection is nevertheless *inflammation*, and that the general affection is likewise nevertheless *fever*. (253.)

273. If it be a fact that fever differs from a local inflammation only in the former being general, that is affecting the whole system, while the latter is confined to a particular part, as I have endeavoured to prove elsewhere, (253.) there can be but very little difference in the method of treatment, only so far as general remedies must differ from local ones; but the object to be accomplished in both cases, viz. to *diminish increased action*, must be the same. (215.)

274. As I consider the division which is made of fevers not only arbitrary, but erroneous, and productive of the most serious consequences, I shall now thoroughly investigate this



very important subject, and examine whether we can find any *essential* \* difference between many of the diseases noticed in (250.) and constituting Cullen's first class. It is unquestionable, that peculiarities in the symptoms frequently distinguish one from the other; but it is as undeniable a fact that most frequently they are so uncertain in their occurrence, and so modified according to concomitant or accidental circumstances, that it is utterly impossible to pronounce exactly what particular affection is present. But as I observed before, (253.) a local inflammation, although constantly varying in its symptoms, is nevertheless *inflammation*, and still requires the antiphlogistic regimen for its subduction †; so fever varies in its symptoms, but still is essentially fever, and requires a similar regimen in all its varieties.

275. Many, upon reading these observa-

\* What I mean by the term *essential* is as it respects their treatment; for I consider that there can be no *essential* difference between diseases whenever the same method is to be adopted for their cure.

† It is probable local inflammation varies much more frequently and considerably than medical men are aware of; but they pay very little attention to these varieties because the same method of cure is uniformly adopted.



tions, will no doubt be inclined to say, "do you pretend to assert that there is no difference between typhus fever, inflammatory fever, the measles, small-pox, and the plague?" I do say, and firmly believe, that there is no *essential* difference between them; that is, that the pathological condition in them all is increased action of the vessels; but that the morbid phenomena, or the symptoms which are produced by this increased action vary frequently, and that this varying, although depending upon the constitution of the individual, the exciting or remote cause, the parts of the body particularly affected, the climate, season of the year, &c., has caused their arbitrary and injurious arrangement into orders, genera, and species. The above assertion, "that there is no *essential* difference between them," I shall now proceed to prove, 1st, by a comparison of their symptoms; 2dly, by a comparison of the morbid appearances found on the dissection of those who have perished in those diseases; and, 3dly, by a comparison of their treatments.

276. First, *a comparison of symptoms.* All fevers are strictly, and correctly speaking, in-



termittents, that is, composed of three stages; a cold, hot, and sweating stage, which together constitute a paroxysm: now, where a number of paroxysms occur, the fever is termed *intermittent*; but where there is no repetition of them, it is termed a continued fever.

277. In a continued fever, the cold stage is comparatively and proportionally short; the hot stage constitutes generally five-sixths of the affection; and the sweating one is frequently so trifling, in consequence of other secretions being substituted for it, that it is overlooked by the medical attendant. We can now at one view see wherein intermittent and continued fevers are analogous, and wherein they *appear* to differ: in the former species of fever all the stages are distinct, and are *all* of a comparative short duration; but after a *short* period (an interval) they return again\*. In the latter species of fever the *hot* stage is the only one of the three stages invariably most evident, and in fact it appears to constitute nearly the whole of the affection: there

\* Query, Is it not probable that the present mode of treating intermittent fevers, is the direct cause of the repetition of the paroxysms?



being seldom a repetition of the paroxysms, or what is commonly called a relapse.

278. Although Dr. Thomas in many respects adheres to the general doctrines of his predecessors, and cautiously follows the steps of the justly celebrated Dr. Cullen, yet we find him in the very commencement of his "Modern Practice of Physic," acknowledging his inability to give a proper definition of the class Fevers, and which is in fact tantamount to the opinion I expressed in the preceding part of this Chapter on the same subject. He says, "it is impossible to give a concise and proper definition of the disease known by the name of fever, as it has no symptom invariably attendant on it, which can point out its real nature or essence. The pulse is exceedingly various in such cases; it may be small, weak, slow, contracted, and unequal; or it may be strong, quick, full, and regular; hard or soft, according as the fever is at the commencement, increase, height, or in the remission and termination; or as the genus and nature of the fever may chance to differ. So also the heat may be equally diffused, or confined to particular parts: sometimes the ex-



ternal parts are cold, with a sense of internal heat; at others, there is general heat or cold over the body; and sometimes the heat is not greater than what is natural. Sometimes the face is pale, and at others it is red or swelled: now it has the natural look, and now the reverse of this. The eyes are heavy, languid, and sad; or red, and impatient of light; they are prominent, distorted, or wild; shining, dull, or ghastly; sometimes bedewed with tears, and deprived of their usual lustre. The tongue is generally dry, chapped, scabrous, red, white, or variegated; often covered with mucus; but not unfrequently moist and natural, without any thirst. The breathing is frequent, hot, unequal, or impeded; the breath is often offensive. The appetite is usually extinct, but in few instances some desire of food remains. Sometimes the urine is crude and watery; at others, red and thin; or often thick, soon becoming turbid, and depositing a sediment; sometimes it is of a natural appearance. To these symptoms are added pains in different parts of the body; depression of strength, and watchfulness; or on the other hand, heaviness, stupor, or imbecility of mind, delirium, diarrhoea, or constipation, vomiting,



tension of the hypochondria, subsultus tendinum, emaciation, and other affections arising with the fever itself, or gradually supervening to it." p. 1. What conclusion can be possibly drawn from the above paragraph, but that any attempt to arrange fevers under distinct heads, although such an attempt may tend to exhibit the ingenuity of the author, cannot be of any possible practical utility, but calculated to be productive of many evils which have been frequently noticed in this work.

279. I shall now proceed to compare the symptoms of those affections together, the connexion between which I doubt not will be obvious; and where there is an *apparent* contrast, it will be found to depend not upon any difference in the nature of the action going on, but upon the parts particularly affected, and other circumstances mentioned before. (255.)

280. The hot stage of intermittent fever is described, as being preceded by chilliness, languor, and a sense of debility, thus; "the second stage commences with an increase of heat over the whole body, redness



of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety and restlessness; the respiration frequent; the tongue furred, the pulse hard and full, sometimes delirium\*." Let the reader compare these symptoms with the morbid phenomena detailed in (254.) as characteristic of symptomatic inflammatory fever; and if the former do not denote in as powerful a manner as the latter, increased action of the vessels, which increased action is nothing less than inflammation or fever, I know not what they denote. What are the phenomena produced in the system by increased action of the vessels? Are not a suppression of some, and a diminution of all the secretions in the body, its immediate effects, which give rise to the hot dry skin, the parched tongue and mouth, the scanty urine, &c. (254.) Let not that innate attachment to pristine doctrines, which is common more or less to all men, divert the reader's attention from these plain facts; let it not bias his judgment, but let him ask the question, can these morbid phenomena, which have been just quoted as the symptoms of inter-

\* The Modern Practice of Physic, by R. Thomas, M.D.



mittent fever, be produced by any peculiar process in the system, but by increased action? And are they not the only true characteristics of general inflammation up to a certain height\*?

281. Amongst the various symptoms enumerated in the same work of remittent fever, the following prominent ones are noticed:—  
“A state of languor and chilliness, which is quickly followed by severe pains in the head, &c.”—and intense heat over the body, thirst, &c.

282. The same Author says—“Synochus is generally marked by the patient’s being seized with a considerable degree of languor, or sense of debility, together with a sluggishness in motion, and frequent yawning and stretching; the face and extremities at the same time become pale, and the skin over the whole surface of the body appears constricted; he then perceives a sensation of cold in his back, passing from thence over his whole frame; and this sense of cold continuing to increase,

\* Till the powers of nature are suppressed, as in debilitas ficta.



tumors in the limbs and rigors of the body succeed. With these there is a loss of appetite, want of taste in the mouth, slight pains in the head, back, and loins, and a small and frequent respiration. The sense of cold and its effects after a little time become less violent, and are alternated with flushings; and at last going off altogether they are succeeded by great heat diffused generally over the whole body; the face looks flushed, the skin is dry, as likewise the tongue; universal restlessness prevails, with a violent pain in the head, oppression at the chest, sickness at the stomach, and an inclination to vomit. There is likewise great thirst and costiveness, and the pulse is full and frequent, beating perhaps 90, 100, or 120 strokes in a minute. When the symptoms run very high, and there is a considerable determination of blood to the head, delirium will arise. In this fever, as well as most others of the continued kind, there is generally an increase of the symptoms towards evening." p. 28.

283. Describing synocha, he says, "It comes on with a sense of lassitude and inactivity, succeeded by vertigo, rigors, and pains over



the whole body, but more particularly in the head and back; which symptoms are shortly followed by redness of the face, throbbing of the temples, great restlessness, intense heat, and unquenchable thirst, oppression of breathing, and nausea. The skin is dry and parched; the eyes appear inflamed, and are incapable of bearing the light; the tongue is of a scarlet colour at the sides, and furred with white in the centre; the urine is red and scanty; the body is costive, and there is a quickness, with a fulness and hardness in the pulse, not much affected by any pressure made on the artery. Its pulsations are from 90 to 130 in a minute; and when blood is drawn, it exhibits a yellowish or buffy crust on its surface, which is the coagulable lymph or fibrin. If the febrile symptoms run very high, and proper means are not used at an early period, stupor and delirium come on at a more advanced stage; the imagination becomes much disturbed and hurried, and the patient raves violently. The disease usually goes through its course in about fourteen days, and often terminates critically, either by a diaphoresis, diarrhœa, hæmorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis



is usually preceded by some variation in the pulse. In many instances it, however, terminates fatally." p. 40.

284. "Typhus mitior generally comes on with a remarkable mildness in all its symptoms, and although the patient experiences some trifling indisposition for several days, still he has no reason to suspect the approach of any severe disease. At first no rigors are perceived, there being only a slight chilliness, which is not succeeded by any increase of heat or redness of the face; on the contrary, it is unusually pale and sunk. He perceives, however, some degree of lassitude, and apparently of debility, with anxiety, dejection of spirits, sighing, and a loathing of food; and towards evening these affections are somewhat increased. In the course of a few days, and as the disease advances, there arise a difficulty of breathing, oppression at the chest, pains in the head, accompanied with a confusion of ideas: there is great depression of strength apparently, even, occasionally, to fainting, whenever the patient attempts to sit up; the tongue becomes dry, and is covered with a dark brown fur, the teeth are thickly in-



crusted with the same; the pulse is small, low, and frequent, and now and then intermits; cold clammy sweats break out on the forehead and backs of the hands, while the palms glow with heat; the urine is pale and watery, like whey; the whole nervous system is much affected with tremors and twitchings; involuntary motions of the muscles and tendons arise; the patient picks at the bed-clothes, and either mutters to himself, or talks incoherently. There is seldom, however, any high degree of delirium, nor is this fever ever attended with violent ravings, but there is usually a dilatation in the pupils of the eyes." p. 48.

285. "On the first coming on of typhus gravior, the person is seized with languor, dejection of spirits, amazing depression of muscular strength, and, apparently, greater debility; universal weariness and soreness; pains in the head, back, and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb violently; the tongue is dry and parched; respiration is commonly laborious, and interrupted with deep sighing; the breath



is hot and offensive; the urine is crude and pale; the body is costive; and the pulse is usually quick, small, and hard, and now and then fluttering and unequal. Sometimes a great heat, load, and pain, are felt at the pit of the stomach, and a vomiting of bilious matter ensues. As the disease advances, the pulse increases in frequency (beating often from 100 to 130 in a minute); there is apparently vast debility; great heat and dryness of the skin; oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth, are covered over with a brown or black tenacious fur; the speech is inarticulate, and scarcely intelligible; the patient mutters much, and delirium arises. The fever continuing to increase still more in violence, symptoms of putrefaction shew themselves; the breath becomes highly offensive; the urine deposits a black and fetid sediment; the stools are dark, disagreeable, and pass off insensibly; hæmorrhages issue from the gums, nostrils, mouth, and other parts of the body, livid spots, or petechiæ, appear on its surface; the pulse intermits and sinks; the extremities grow cold; and death at last closes the tragic scene." p.62.



286. "The yellow fever," he continues, "usually attacks with lassitude and weariness, chilly fits, listlessness of every thing around, faintness, giddiness, flushing of the face, redness of the eyes, pains in the eye-balls and lower part of the forehead, as likewise in the back; debility and sighing, thirst, and a tendency to coma; the urine is high-coloured, small in quantity, and turbid; the perspiration is irregular, interrupted, and greatly diminished; the saliva is viscid; the tongue is covered over with a dark fur; the bile is secreted in unusual quantities, and thrown into the stomach, from which it is again speedily ejected; and the skin is hot, dry, and hard. The disease continuing to advance, the eyes become of a deep yellow; the face and breast are tinged with the same hue; an incessant retching and vomiting of frothy bile ensues; great costiveness prevails, and peculiar delirium arises, which is attended with a permanent dilatation of the pupils of the eyes.

"There is hardly ever an evident remission until the fever has entirely gone through its first stage, which is generally in thirty-six or forty-eight hours; when there is often such an abatement of the symptoms as to induce



the patient to think himself tolerably well : but an early recurrence of the symptoms in an aggravated form, accompanied with extreme debility, soon convince him of the contrary.

“ In the last stage of the disease, the greatest debility prevails, and symptoms of universal putrefaction arise ; large patches of livid spots are to be observed on different parts ; the tongue becomes dry and black, the teeth are incrustated with a dark fur, the breath is highly offensive, the whole body exhibits a livid yellow in many cases, but not in all ; hæmorrhages break forth from the mouth, ears, and nostrils, dark and fetid stools are discharged, hiccups ensue, the pulse sinks, and death follows very quickly.” p. 80, and 81.

287. I should apologize for extracting so much from any Author, but I really conceive it necessary in order to convince the reader that the history given of those and many other affections in this class is mere tautology ; and were a hundred writers to describe them upon the same principle, the hundred accounts would differ one from another, but all concur in pointing out the nature of them, and the similarity between them.



288. All the diseases in the class Pyrexiaë, with a few exceptions, exhibit the above symptoms, modified by accidental or concomitant circumstances, which have been mentioned in the preceding part of this Chapter. And if the reader will only take the trouble of reading the account of those affections in the work from which I have taken the liberty to quote so largely, and compare one with the other, he will find, I doubt not, enough to convince him of the truth of my assertion, *that they do not, with a few exceptions, differ essentially from one another.*

289. Having given a sketch of the symptoms of those affections from the work of Dr. Thomas, I shall now proceed to the second method, by means of which I proposed to prove the analogy between the *nature* of these fevers, which is by comparing the appearances on dissection; and this I shall take the liberty of doing from the same book\*.

\* I have taken the liberty of making these quotations from Dr. Thomas's work *in particular*, for two reasons; 1st, Because his book, which contains the doctrines of Cullen, and of many of our most eminent men, is universally read by the Profession; and, 2dly, Because Dr. Thomas does not merely confine himself to his own experience (which, permit me to



290. *Intermittent Fevers*.—"Dissections of those who have died of intermittents, shew a morbid state of many of the viscera of the thorax and abdomen; but the liver, and organs concerned in the formation of bile, as likewise the spleen and mesentery, are those which are usually most affected." p. 7.

291. *Remittent Fever*.—"The usual appearances on dissection, are congestions of blood in the liver and spleen, inflammation in the alimentary tube, a distended state of the vessels of the brain, and serous effusion into the cavities of that organ." p. 22. A similar account is given concerning the effects produced by synochus, p. 31, and also of those produced by synocha, p. 41.

292. *Typhus Mitior*.—"Upon dissection we always find "turgescence and inflammation of the thoracic and abdominal viscera; and in the interior parts of the brain, increased vascularity, and collections of serous fluid." p. 49.

293. *Typhus Gravior*.—"The appearances say, is by no means ordinary), but builds his doctrines upon the aggregate testimony of the most celebrated medical men.



usually observed on dissection, are inflammation of the brain and viscera, but more particularly of the stomach and intestines, which are now and then found in a gangrenous state. In the muscular fibres there seems likewise a strong tendency to gangrene." p. 62.

294. *Yellow Fever*.—After this affection we discover "the coats of the œsophagus corroded; the stomach and intestines loaded with black fetid matter, inflated, inflamed, and sphacelated; the liver shrunk and flaccid; the lungs sometimes inflamed, as also the membranes of the brain." p. 84.

295. *Small-pox*.—"The appearances after death are the same as those of typhus gravior." p. 241.

296. *Measles*.—"The lungs and intestines show strong marks of inflammation, and a tendency to sphacelus." p. 262.

297. *Cynanche Maligna*, or Putrid sore Throat, and *Scarlet Fever*.—"The fauces are inflamed, suppurated and granginous; the trachea and larynx are likewise in a state of



inflammation, and the lungs in many instances ; with the same morbid appearances in other parts of the body as in typhus gravior." p. 244.

298. The *Plague*.—"The intestinal canal gangrenous ; the liver in a state of congestion, and considerably enlarged : proofs of inflammation in the brain, its membranes, in the lungs, and in the kidneys, have also been found ; with other appearances that are found in typhus fever." p. 283.

299. Having now compared the symptoms of the majority of those diseases in the class Pyrexia together, and also compared the appearances found upon the dissection of those who perished from those affections, I need scarcely observe, that there is a striking similarity between them all, even from those found after intermittent fevers to those found after the plague. We find in them all, more or less, the effects of violent inflammation ; and it demands particular attention that in those fevers which are considered putrid, and of the typhoid type, as typhus gravior, the yellow fever, the plague, &c. and in which those



morbid phenomena that I described as the symptoms of *debilitas ficta* (179.) are peculiarly conspicuous, there we find notorious effects of the ravages of inflammation, some parts being actually gangrenous, and a strong tendency in the muscular fibres to gangrene.

300. Now I presume, could we discover the cause of those morbid appearances found after death, the question respecting the nature of these fevers, and consequently, respecting their proper treatment, would be forthwith decided, and for ever set at rest. What course shall we then adopt in order to accomplish this desideratum? Is not the most certain and infallible method, to investigate the *proximate* cause of similar appearances in other affections, and in other parts of the body.

301. The question now is what produces those gangrenous patches so frequently observable in the viscera of those who perish in many of those fevers; and also that gangrenous tendency in the muscular fibres? Gangrene, in those cases, can only be produced either by inflammation or debility. (225.) My



business is to prove that they are not the effects of debility; for I am persuaded they are produced by increased action. First then, I aver, that as mortification or gangrene, which is produced by debility, or in other words, by an insufficient quantity of blood, always and invariably first attacks those parts that are situated at the greatest distance from the centre of the circulation, (227.) and as the appearances in these fevers are always found close to the centre of the circulation, as in some of the viscera, *ergo* they are not the effects of debility.

302. Secondly, gangrene produced by debility always commences from one spot, which gradually increases, advancing *towards* the heart, not leaving in its progress any portion of living substance behind; but as the gangrene found after those fevers is the very reverse of this, appearing in a number of distinct spots, and being situated between the heart and vast portions of the body possessing perfect vitality, *ergo* the gangrene in question is not the effect of debility.

303. Thirdly, consistent with all the laws



of the animal economy, whether viewed in a pathological or physiological condition, was mortification in these fevers the effect of debility, the extremities would be the parts first affected, being situated farthest from the influence of the heart, and not those viscera which are close to, and directly under the influence of this organ. The vitality of the stomach, lungs, intestines, &c. is so considerable, that they are the very last parts in the body which would mortify from general debility. Further, the fact that the gangrene subsequent to putrid fevers appears in spots or patches, which are more or less insulated or separated from one another by inflamed portions of the viscera, must convince any man that it is not produced by debility.

304. If we turn our attention to those who perish in diseases of real debility, as after hectic fever, phthisis pulmonalis, anasarca, &c. &c. we find no such appearances—no inflamed patches, no gangrenous spots; hence these appearances, as they have never been perceived after any of those diseases of real debility, cannot in fevers be considered the effect of debility.



305. I now proceed to the consideration of the various methods adopted to subdue those fevers, many of which, particularly the plague, yellow fever, &c. are believed to be putrid fevers, and require from the first the tonic regimen. In the first place, I beg leave to observe that I consider all these putrid fevers as they are called, species of synochus, that is, inflammatory in their commencement, and, if not checked, putrid in their termination. If we compare the symptoms given of many of those putrid fevers (281, &c.) with those I mentioned as the symptoms of debilitas ficta (179, &c.), the similarity between them will be obvious; and as in the latter affection, the *appearances* of debility are in proportion to the degree of action, so is it in these fevers: hence we have divisions and subdivisions, into typhus mitior, typhus gravior, &c. &c.

306. From what has been already said on this important subject, it would almost appear impossible that there could be any ambiguity in the treatment of these affections, or a second opinion respecting the most proper method of treatment; but, strange to say, very considerable uncertainty exists about their



treatment, and a vast variety of opinions on the subject are entertained. Towards the removal of the former evil, and the diminishing of the latter, I trust these observations will in some degree tend.

307. These evils entirely arise from not distinguishing the symptoms of debilitas genuina from those of debilitas ficta; (181.) and in fact, from supposing the morbid phenomena which characterize those fevers termed putrid to be the effects of general and genuine debility, and to denote a thorough loss of tone or stamina in the system. Thus, while many fevers are treated according to the antiphlogistic regimen, others, in which the increased action is ten times more violent, are treated with stimulants and tonics. Hence treatise after treatise has been published upon the subject of fevers, and the practice advised in many of these works, is as diametrically opposite to the other as the antiphlogistic regimen is to the tonic; a termination to this contrariety of sentiment need not be expected while fevers are viewed as distinct from one another, and while the symptoms of genuine debility continue undistinguished from those



of spurious debility, or those which are produced by increased action.

308. Some celebrated authors advise typhus fever, the plague, the yellow fever, &c. to be treated from the beginning with the most powerful stimulants, as brandy, wine, æther, opium, &c., which practice must proceed from their believing these affections to be really *putrid*, and attributing “the weak small pulse, and the prostration of strength” which characterize these fevers, to considerable debility. I have so often in the course of this work had occasion to mention the proximate cause of these phenomena, that I shall not again recapitulate it.

309. On the other hand, there are an equal number of celebrated men who recommend these fevers to be treated upon the strictest antiphlogistic regimen, with copious blood-letting, purging, &c. These latter gentlemen must believe these affections to be of a highly inflammatory nature; for upon what other principle could they possibly advise the above practice?



310. That both these opinions cannot possibly be correct is an unquestionable axiom; and a fact of no less certainty is, that although numbers fall a sacrifice to these fevers, yet many recover under both plans of treatment. How are we to account for this apparent impossibility? for if these fevers be actually of a putrid nature, and the morbid phenomena which characterize them, be the effects of extreme debility, not a single case, if we know any thing of the laws of the animal economy, could possibly survive under the antiphlogistic regimen. And again, if those symptoms be only the effects of increased action, as I am inclined to believe, how can any person recover who is treated upon the tonic plan, with brandy, wine, &c.; for we know these fluids are as calculated to augment inflammatory action, as oil is to promote combustion; and we might as well think of conquering the former with these fluids, as of extinguishing the latter with the oil, except it be by totally smothering the vital spark.

311. The yellow fever and the plague have always attracted considerable attention, as



most formidable diseases\*. Dr. Rush, of Philadelphia, in his work on the former affection, states it as his opinion, in opposition to the majority of practitioners, that the strictest

\* Although I have nothing to do in this work with the nature of *contagion*, yet I cannot help expressing my astonishment at the variety of opinions which have lately been advanced before the Legislature on this subject. Some say the plague is contagious, while others say it is not: who then is to decide? for while this subject be left as a matter of opinion, medical men will be found always to differ. I should prefer appealing to the laws of the animal economy. The simple question, in my opinion, is, when morbid matter (whatever its origin may have been, or in whatever state it may have been introduced into the system,) is taken into the body so as to produce a peculiar or morbid action, does it not invariably cause the formation of morbid fluids, which are in their nature, properties, and powers, analagous to that which originally gave rise to the action? will they not produce a similar action in other bodies? Is there a single exception to this fact? Is it not the case with the morbid matter that gives rise to typhus, to the small-pox, to the measles, to hydrophobia, to syphilis, to psora, &c. &c. &c.? And may I beg leave to ask why the morbid matter which produces the plague is to be an exception? The fact so frequently stated by the anti-contagionists, that the plague often attacks certain persons while it has no effect upon others, although equally exposed to its influence, is no more a valid objection to the contagious nature of this affection, than it would be to say that there is no *power* in the saliva of a rabid animal to produce hydrophobia, because many have been bitten with impunity by creatures labouring under this affection. And it might as well be said that cold damp air has no power of exciting pulmonary affections, as colds, &c.



antiphlogistic regimen, even to the detraction of a considerable quantity of blood, was the only sure method of conquering this malady, in which the pulse is described as being *so weak and low as not to be perceived without pressing hard upon the artery, nay in some instances it intermits.*" Dr. Clarke says, he never saw a person recover from this disease who had been bled! and Dr. Chisholme appears to concur with the last gentleman, although he acknowledges that the blood drawn exhibited the *inflammatory crust* \*. It is much to be regretted that we are not informed how much blood was taken in these cases, and at what period of the disease it was drawn, as I believe the success entirely depends upon these two points.

312. I said before that I considered all those putrid fevers species of synochus, and

because, truly, many are perpetually exposed to it without any such affections being produced. I beg leave to refer the reader to my observations on the predisposition in some people to disease, and on the powers of Nature in others, in expelling morbid matter. (See 145, 146, and the note to 147.)

\* The failure in these cases may be attributed to the blood having been taken at too late a period; and to a sufficient quantity not having been detracted.



that, in proportion as the morbid action is violent and excessive, the inflammatory stage will be short, and the genuine debility, which is the effect of this, will be proportioned in degree and duration to it. Taking these things into consideration, the facts which I stated in (309.) and which appeared unaccountable, are no longer inexplicable; and we can now easily see the reason why some recover under the very opposite modes of treatment: besides the recoveries which Nature herself accomplishes independently of the assistance of art, by exciting some considerable discharge from the system, as by a diarrhœa, active hæmorrhage, &c. the blood-letting, which has ever proved serviceable must have been done at the early stage of the disease; while the tonic regimen, when of service, must have been adopted at the latter period of it. But whenever the depleting plan was adopted at a late period, death must have been the inevitable consequence; and when the tonic plan was adopted early it must have proved equally fatal; hence the statement of some that they cured by blood-letting, and that of others, that they cured by tonics, may be perfectly true.



313. As medical men are but seldom consulted till a disease becomes formidable, so the chances are, that in those cases where stimulants have been ordered with impunity, nay, I would add, with advantage, that the first or inflammatory stage had terminated, and the second one, or the putrid stage, was present. The same reasoning is applicable to the accounts we have of the benefit of blood-letting; but these two stages have never been properly noticed, and the indiscriminate use of these opposite remedies has by *chance* cured some, and by chance has ——— many! for the antiphlogistic regimen is as improper and as fatal in the second stage, as the tonic plan is in the first.

314. The first stage, or the inflammatory one in these fevers is of extremely short duration, and that shortness in proportion to the violence of the attack; so that frequently it lasts not more than twenty-four hours; and I doubt not, but in the more violent species of the plague, its duration is not longer than six hours. When therefore blood-letting is to be adopted, it should be during this period, if not, it will do more mischief than good.



The quantity of blood should be proportioned according to circumstances, and considerable, for reasons given in (184.)

315. It is worthy of remark, that the Asiatics invariably detract blood in all cases of the plague, *provided they see the patient at an early period*: this circumstance alone, independently of any arguments whatever, should be sufficient to convince any man of the correctness of my theory; for, in the first place, they certainly would not let blood except from a conviction of its peculiar advantage, every symptom in the commencement of these fevers being calculated to lead a person unacquainted with physiology and pathology, to administer tonics. Secondly, their making it a rule never to detract blood except at the very commencement of these fevers, must have arisen from their having witnessed the baneful effects of it when adopted at any other period of the disease.

316. But I find I am not singular in recommending blood-letting at the early stages of these fevers, for Dr. M'Lean, who has had considerable experience in them, concurs with



me, and says, "It is only at the *very early stages* it is advisable to have recourse to this operation—blood-letting." Dr. Dickson, writing on the subject, says, "That it is only by a copious abstraction of blood, employed *while the fever is forming*, that it can be arrested."

317. After these observations, it may be said by some, that while I have stated what should *not* be done in fevers, I have omitted stating what should be done. I have not, it is true, entered into a detail of the methods proper to be adopted in fevers, nor did I ever intend so to do; for if I had done so, I would have adopted that *very* plan which I so much reprobated in my introduction, (16, 17, 18.) viz. giving rules for the regulation of medical practice, and thus, more or less, endeavour to establish my dogmas. No, I have in the first part of this little work described briefly the three pathological conditions of the human system—the methods which their symptoms, or morbid phenomena, according to the laws of the animal economy, require to be adopted for their subduction; and finally, what I have related concerning fevers, was



merely to illustrate the pathological condition of the system which produces such morbid phenomena, that the practice may be built upon it, and not upon my, or any other man's peculiar notions. So that were I asked, would I bleed in fevers, or would I order tonics, I would not give a decisive answer: my reply would be, it must entirely depend upon circumstances; in many cases I should detract blood, and that most copiously; while in others I would give powerful tonics: the symptoms would be my only guide, and the only regulators of my practice.

318. When we view these fevers, and in fact all diseases, purely according to the nature of their symptoms, forgetting altogether their divisions and subdivisions, the ambiguity, the uncertainty, and the difficulty in their treatment, becomes evanescent; while the dense cloud of ignorance and prejudice in which they have been enveloped by the doctrines current respecting them, are rapidly dissipating by the chaste influence of science; and the object to be accomplished in treating them being now obvious, Nature, as it were, holds in hand the torch of knowledge, and guides the practitioner in her secure and easy path.



## CHAP. VI.

### SECTION I.

*Morbid Affections of various Viscera, illustrated by Cases which were referred to in the Chapter on Nosocoilia.*

319. FROM many observations in the preceding part of this work, it may be imagined by some who are not thoroughly acquainted with my views of morbid actions, that I am a great advocate for blood-letting; but I am inclined to believe that they will change their opinion when they have read the subsequent pages.

320. While I profess myself an advocate for the use of the lancet in a great number of diseases, I nevertheless most highly disapprove of its use in many affections, in which it is generally adopted.

321. The fact is, blood is often detracted



when it should be retained, and as often retained in the system when the life of the person would be saved by detracting it. The principal cause of this evil—of this uncertainty in the use of the lancet, is to be attributed to men building their practice upon the doctrines of others, and not upon the laws of the animal economy. This evil I fully discussed in (16, 17, 18.)

## SECTION II.

*Pseudo-pulmonic Affections, or Derangement of the Chylopoietic Viscera, producing symptoms which are often mistaken for Pulmonary Diseases.*

322. The lungs which perform one of the most important functions in the animal economy—that of regenerating the blood, are properly considered the most delicate organs in the animal. They are composed of innumerable air-tubes and blood-vessels, united together by, and imbedded in, cellular substance; and covered over with a serous membrane, termed the pleura. Some authors have described them as possessing an



incredible number of air-cells\*, the internal surface of which, if we believe Lieberkuhn, is equal to 1500 square feet; and the membrane which separates these cells from the branches of the pulmonary arteries, and through which the important change† in the nature of the blood takes place is, according to the investigation of Hales, only the one-thousandth part of an inch in thickness. Although the lungs of an adult are capable of containing one hundred and twenty cubic inches of atmosphere, yet only a sixth part of this is altered at each respiration, so that one hundred cubic inches of air always remain in the lungs, even after death ‡.

323. The alternate drawing into, and expelling from the lungs the atmosphere, take

\* According to Keil, 1744,000,000 cells in each lung.

† The difference between Venous and Arterial Blood :—

	<i>Venous.</i>	<i>Arterial.</i>
Colour	Brown-red,	Vermilion-red.
Odour	Weak	Strong
Temperature	101.75° F.	Near 104° F.
Capacity for caloric	852 <sup>1</sup>	839
Specific Gravity	1051	1049
Coagulation	Less rapid	More rapid
Serum	More abundant	Less abundant

<sup>1</sup> Water being 1000.

‡ Allen. Pepys.



place in a healthy adult, fourteen times in a minute, or once for five pulsations of the heart. The process which these organs perform is so absolutely necessary for the preservation of man and all warm-blooded animals, that they are commonly termed “the *vital organs*.” The process of digestion, although in itself of paramount importance to the general health of the animal, yet may be impeded or totally suspended for hours, nay for days, without actually *destroying* the individual; and so may all other functions in the animal machine; but the function of the pulmonary tissue cannot with impunity be suspended for one minute, and its suspension for two or three minutes, is sufficient to terminate the existence of man.

324. I have considered it necessary to make the foregoing general remarks on the nature, structure, and functions of these organs, in order to enable the reader more fully to comprehend the pathological facts I am about discussing.

325. The lungs are not by any means, abstractedly considered, more exposed to cir-



cumstances calculated *directly* to injure them, and impede their functions, than many other organs in the animal machine, nor by far as much exposed as some organs, viz. the digestive apparatus; (115.) yet very few die in this country in whom the lungs do not exhibit, more or less, a morbid appearance. What is the cause of this? It is generally attributed to the vicissitudes of the weather in this climate; but this reason will not stand the test of analogy; for who are more exposed to the vicissitudes of temperature than savages or men in a state of nature, and yet very few indeed die of chronic pulmonary affections\*: I recollect but one solitary instance amongst the North American Indians, during my four years residence in Canada, of pure pulmonary consumption; while vast numbers of the civilized part of the inhabitants, the Canadians of French extraction, died from this very disease. There is no country in which the vicissitudes of climate are more frequent and remarkable than in Canada, yet we find one class of inhabitants (the uncivilized Indians) almost totally exempt from this malady, while

\* Pneumonia, or acute inflammation of the lungs excepted.



another class (the civilized inhabitants) are very often attacked with it. Both classes are equally exposed to the climate; if climate therefore be the principal cause of pulmonary consumption, why is one class so much more afflicted with it than the other? Until this question be satisfactorily answered, it cannot be thought odd that I should differ from the opinion of almost the whole medical world, and affirm, that I attribute the origin of consumption, in nine cases out of ten, to a deranged state of the digestive apparatus (nosocoilia).

326. Out of the hundreds I have either opened myself, or witnessed opening, I am confident nine-tenths presented morbid alterations in the pulmonary tissue. These morbid appearances were not, I am convinced, produced by a disease originally in the lungs themselves, but arose from a morbid action in some of the auxiliary organs. These auxiliary organs, in consequence of imperfectly performing their duty, throw upon the pulmonary tissue a greater burden than it is able to discharge; and thus noxious and morbid fluids, which should have been separated from the blood by



the other regenerating organs\* become pent up in the lungs, producing morbid actions in these viscera, and frequently terminating in their disorganization.

327. Nothing is more common than when persons are attacked with a pain in the chest, and with a difficulty of breathing, which are considered by the majority of the profession as symptoms sufficiently characteristic of the existence of inflammation of the lungs, or of its membrane, to detract blood.

328. But will those same gentlemen invariably act upon the same principle? will they pronounce a person to be labouring under inflammation of the brain because he has simply a pain in his head, and is stupid? To be consistent, they should; for if pain in a part, and imperfect action, be sufficient characteristics of inflammation in the one instance, they certainly should in the other.

329. But let us investigate the effect of detracting blood for a sympathetic pain in the

\* The liver, skin, kidneys, &c.



chest and difficulty of breathing: blood is drawn the symptoms increase—it is repeated—no diminution of the affection—a troublesome cough ensues—blisters are applied; the symptoms of pulmonary consumption supervene—anodynes are administered—in the course of a few weeks or months, death closes the scene—the body is opened—the lungs are found diseased—and the physician says, “all the art of man could not have availed in this case.”

330. It may be asked, was not the affection of the lungs the cause of death in this case? and I will readily reply, certainly it was; but, permit me to add, only in the same sense that we say such a person died of hectic fever, although the hectic fever was only the consequence of a diseased joint or a lumbar abscess, which hectic of course would never have occurred, only for this or some other local affection.

331. It is the very same with respect to the former case: life was extinguished by the disorganization of the lungs; but the disorganization was only the effect of a *primary* de-



rangement in other parts. The principal art in the treatment of hectic, consists in endeavouring to remove the cause; and every attempt to save the individual's life, without attending to the cause, would be justly considered by the profession, as absurd, useless, unscientific, and injurious, doing more harm than good. Yet, strange to relate, we find the treatment recommended, and the practice most generally adopted, in pulmonary consumption, are calculated not only not to allay the effects, but actually to rivet the disease, and to diminish the chances of a cure. This practice I am not surprised at, when I recollect that the original cause is supposed to be in the lungs.

332. It is, I conceive, full time when the profession pronounce a disease *incurable*, as they have long since done “pulmonary consumption\*,” to doubt, at the very least, the

\* “Of all the diseases to which the inhabitants of the British Isles are frequently subjected, pulmonary consumption, or phthisis pulmonalis, as it is styled by the best medical writers, may justly be reckoned one of the most fatal. The deaths which it occasions, happening chiefly to those who have arrived at the most engaging period of life, are the more deplorable. It is not therefore wonderful, that this disease should



correctness of their theories, and the validity of their practice.

333. In my observations on the physiology of the liver, (81.) I adduced arguments sufficient I presume, to prove that this organ is a powerful auxiliary to the lungs, and that the due action of this important gland, depends directly on the healthy state of the alimentary canal, and the completion of the process of digestion ; so that it is impossible for the digestive apparatus to be deranged without affecting, more or less, the liver. (91.) I also observed, that the principal causes of nosocoilia act by producing a debilitated state of, or a loss of tone in, the stomach and intestines ; and that the methods we should adopt

have claimed particular attention from the most eminent medical writers. But notwithstanding the study and labour of ingenious and discerning men for many ages, phthisis pulmonalis still continues to be an opprobrium to the healing art ; and the prospect of wiping off this opprobrium, by communicating to the public a successful method of cure, is not great. There is no reason, however, to despair of making some progress in this important object ; and if medical practitioners were enabled to distinguish the different modifications under which this disease appears, at early periods, much good might be done."—*Observations on Pulmonary Consumption.* By A. Duncan, M.D. &c. &c.



for the removal of nosocoilia, must be with the intent of rousing them into action, of restoring them to their due tone, and of enabling them to perform their important duties in the system. (132.)

334. Let us suppose then, the intestinal canal to be loaded with half digested matter, and with a quantity of those excrementitious fluids, which are perpetually deposited in the large intestines; (80.) the liver then becomes incapable of acting on the blood, so as to free it from its carbon and hydrogen; the blood becomes then surcharged with these principles, and in this state is conveyed to the lungs, which organs, labouring under the burden, and struggling to compensate for the imperfect action of the liver, cause a difficulty of breathing or short respirations, and pains in the chest. Are these morbid phenomena to be wondered at, when we reflect upon the ~~state~~ state of the lungs under this oppression? Is not the above state of the pulmonary organs enough to produce a difficulty of breathing, &c. without any species of inflammation? If the branches of the pulmonary artery be over-distended with *venous* blood, the more minute



branches of the trachea and the air cells, (if there be any in the lungs) cannot be duly dilated so as to contain the natural quantity of air; hence the difficulty the individual experiences in making a full inspiration.

335. The remote cause of this affection, is a debilitated or weakened action of the digestive organs; (93.) the proximate cause of these *symptoms* (pains and difficult respiration), is a want of due power in the lungs to compensate for the imperfect action of the liver, &c. (153.) The lungs having an over duty to perform in this case, require additional powers in proportion to the degree of the affection; if blood be detracted, the difficulty of breathing may be temporarily relieved, but the remote cause (debility) is proportionably increased, and consequently the morbid affection in the end aggravated. Whatever tends to restore tone to the stomach, to remove from this organ the cause of its torpor, is calculated to remove the affection of the lungs; but whatever tends to increase the weakness of the former, must aggravate the disease in the latter: this cannot but be obvious. When blood is drawn, the difficulty of breathing,



although temporarily relieved, frequently gets worse after a short time, because the debility of the intestinal canal becomes increased, and the auxiliary organs are deprived of that power which they in this case *peculiarly* require. This method of practice is only attacking the effects and not the cause, and that by means which are calculated to render the cause more permanent ; for the strength which the lungs enjoyed previous to the blood-letting, and which enabled them to compensate, although with difficulty, for the imperfect action of the liver, &c. is considerably diminished by this means : hence that congestion of venous blood in the lungs, which at first gave rise to the difficulty of breathing, &c., and which depended upon a morbid action in other organs, becomes by the depleting system, the cause of actual disease in the lungs \*. There is, I allow, an increased quantity of blood in the lungs in this affection, but then it is venous blood, which never could produce the symptoms, (196.) or the effects of inflammation.

\* I beg leave to refer the reader to the passage I extracted from M. Richerand's work ; it deserves careful perusal. See p. 83.



336. While I am writing on this very important subject, my hand trembles at the possibility of my being unable to convey distinctly my ideas to the reader ; for I acknowledge that there is considerable difficulty in treating these pulmonary affections, and in endeavouring clearly to define what the circumstances are which distinguish one affection from the other.

337. Let it be decidedly known, that the omission of blood-letting when there is an actual inflammatory affection of the lungs, is as great an error, if not a greater one, and as detrimental to the individual, as the adoption of this remedy, when the morbid phenomena are only produced by imperfect action of the auxiliary organs.

338. The circumstances of our patient should be minutely investigated, such as whether his constitution be predisposed to inflammation or not, (195.) and particularly whether he has been recently exposed to the *exciting* causes of inflammation, (201.) —also, whether the *proximate* causes of the morbid phenomena which characterize inflammation be present?



(256.) If these queries be answered in the negative, and that the symptoms of nosocoilia (100, &c.) present themselves, there need be no doubt respecting the nature of the case, and the propriety of adopting the antinocoiliatic regimen. (132.)

339. Neither the imperfect action of an organ, nor the existence of pain in a part, should be considered sufficient characteristics of inflammation; the former may depend upon a vast variety of circumstances, independently of inflammation; for instance, in asthma there is great difficulty of breathing without inflammation; there may be imperfect vision or imperfect hearing without inflammation, or imperfect action of the liver, &c. &c. And the latter may be only sympathetic, as pain in the head frequently is; or it may be produced by an affection in a part without any species of inflammation, as the pain in the abdomen in colic, &c.

340. I have endeavoured to prove the evil consequences of detracting blood in this pseudo-pulmonic affection, and therefore the necessity of being sure of the existence of in-



flammation before having recourse to this operation; but while we are perfectly safe in adopting the first part of the antinosocoiliatic regimen\* whether it be pneumonia or not, we are by no means equally so in adopting the depleting regimen, should the affection arise from nosocoilia. (131.)

341. I am aware that the administration of cathartics in inflammatory affections of the thoracic viscera has been long since, and continues to the present day, generally prohibited; because, say the profession, “purgative medicines determine the blood to the internal parts.” Of course, they mean to *the lungs*, as well as to other viscera, else this reason would be inapplicable. But that I positively deny—cathartic medicines, far from determining the blood *towards* the lungs, actually divert the blood *from* them, and consequently are *beneficial* in inflammation of the pulmonary organs; the only case in which they are inadmissible, is in enteritis or inflammation of the intestinal canal, for reasons advanced in (261, 262.) But as they are of the greatest

\* The administration of cathartics.



utility in all other species of inflammation, (see note to 80.) their administration can never be productive of evil in inflammation of the lungs.

342. I was consulted in the month of August, 1823, by a gentleman of about thirty years of age, for a violent pain in his chest, with a difficulty of breathing. He said these symptoms came on suddenly about three or four days past, but were now very much augmented in violence. He also stated, that better than a year before he was attacked in a similar way, and was attended by two or three medical men; that he had been then bled repeatedly, and had been confined to his bed for nearly three months, "and now," he added, "I fear I shall be laid up for some time; but do you take enough of blood from me at once, if possible, to check it in the beginning."

343. I made several inquiries, from his answers to which, I concluded his symptoms arose from an affection of the digestive organs, and consequently that I had no authority to bleed him. I came to these conclusions upon



the following grounds: first, he had not been exposed to the exciting causes of inflammation; (194.) secondly, he had been exposed to the exciting causes of nosocoilia; thirdly, the difficulty of breathing, and the pain in his chest came on suddenly after eating a hearty supper; fourthly, the other symptoms of inflammation would, at this stage of the disease have been very evident, had it been an inflammatory attack, whereas there was a total absence of them; fifthly, the general symptoms of nosocoilia were present; sixthly, and lastly, he had been a little relieved by a dose of salts he took the day before he consulted me.

344. Upon my communicating to him my belief of the nature of his present affection, and that I would not bleed him, he was much surprised, and having read some medical works, he observed, “are not pains in the chest, and a difficulty of breathing, the true symptoms of pleurisy; and is not bleeding the sure method of curing me? for I am convinced I would have been in my grave only for the loss of so much blood when I was attacked before with exactly the same affection.” However that



may be, I said, I am convinced that you do not at present require bleeding; and letting blood would be highly injurious to you. I further endeavoured to explain to him, as well as I could to a person unacquainted with the animal functions, the grounds of my opinion, and that if I did not considerably relieve his sufferings in forty-eight hours, I would then bleed him. "Well," said he, "I will try you for this day; and if I do not, at all events, feel a little relieved on to-morrow, I then must be bled."

345. I then ordered him an emetic of ipecacuanha, and in the evening a strong cathartic, composed of six grains of calomel, and ten of jalap. Next day he felt much relieved, and by repeating the cathartic medicines for two or three days, his pulmonary affections were totally removed; and he said he was now convinced by experience of the utility of my plan, and attributed his former tedious recovery to the methods that had been adopted by his medical attendants.



## SECTION III.

*The Cause of Phthisis Pulmonalis Discussed.*

346. I have no doubt but many will be surprised when I state it to be my opinion, that tubercles\* in the lungs are frequently produced by nosocoilia: I do not pretend to say that they are thus always produced, but I am confident they are very often. I shall proceed to prove this assertion by physiological and pathological facts. Dr. Duncan, senior, in his Treatise on Phthisis Pulmonalis, makes the following observations on tubercles of the lungs, and the symptoms attending them. He says, "of all the species of phthisis, the tuberculous is both the most frequent and the most dangerous. That it should be the most frequent is, perhaps, in some measure the consequence of its arising from the greatest variety of exciting causes. But however numerous and varied these exciting causes may be, all of them operate as giving rise to this modification of phthisis on one general prin-

\* Small hard bodies, generally found in the lungs of those who die of pulmonary consumption.



ciple, viz. as inducing those peculiar tumours termed tubercles, which have been found in the lungs of patients who have died of this modification of phthisis. The appearance of these tumours has been accurately described by several eminent writers on morbid anatomy. Here, it is sufficient to observe, that they are in general found under the form of hard substances, which, when cut, appear to be solid bodies of a whitish colour.

“Respecting their nature, different opinions have been entertained. Some suppose them to be entirely inorganic bodies, formed of the coagulable part of the circulating blood; and that they are often incapable of being penetrated even by the finest injections is certainly true. But a more common opinion is, that each tubercle may be considered as a lymphatic gland in a particularly diseased state; that this diseased condition is the consequence of scrofula, and that the tuberculous phthisis may, in every instance, be considered as scrofula affecting the lungs.

“In support of this doctrine, there are many probable arguments; and, among other things, this opinion is corroborated, from its being a well known fact, that tuberculous phthisis is often



observed as an hereditary disease in scrofulous families ; from its occurring most frequently at a particular period of life, between the age of fifteen and twenty-five ; and from the striking resemblance which may be often observed between tubercles of the lungs, and diseased mesenteric glands, producing tabes or phthisis mesenterica in those who are evidently subjected to hereditary scrofula. For in the mesentery, the diseased tubercles, though they were unquestionably at first lymphatic or lacteal glands, are equally inorganic as tubercles of the lungs. But, without offering at present any further observations on the nature of those tumours which give rise to that modification of phthisis which may be denominated the tuberculous, I shall proceed briefly to describe the symptoms with which it is commonly attended.

“At the commencement of tuberculous phthisis, neither the cough nor dyspnœa are by any means urgent ; and in many instances, even to the very end of the affection, there hardly occurs any expectoration. The cough, in general, is of the short tickling kind, without being violent ; and may be termed rather a *tussicula* than a *tussis*. But, while it takes



place without any great uneasiness, it is still troublesome, from being very frequent. Notwithstanding, however, these frequently repeated efforts towards expectoration, the irritating cause is not removed; and those slight fits of coughing, terminating without the smallest expectoration, even of mucus, are again speedily renewed. In most cases, no remarkable pain attends the tuberculous phthisis; and when pain occurs, it is neither fixed to any particular spot, nor is it constant.

“ In many instances, no dyspnoea whatever occurs in the tuberculous phthisis; or at least, difficulty of breathing is observed only upon motion or exertion. When the patient remains at rest, the breathing is perfectly free; and it is very little, if at all, affected by change in the position of the body. Contrary to what happens in the apostematous phthisis, the patient can lie with equal ease on either side.

“ In this state of the pneumonic complaints, they seldom alarm the patient. And if they give any alarm to others, it is only, in general, from their long continuance, and from their occurring in habits with whom there is reason to suspect predisposition to phthisis. That



this tussicula is the first stage of tuberculous consumption, is chiefly inferred from the remarkable loss of strength, and evident wasting of the habit, with which it is soon attended.

“ In the incipient state of the tuberculous phthisis, the frequent tickling is, in general, also accompanied with a peculiar change in the appearance of the eyes. The red vessels, which are observable in the tunica adnata of those in a state of health, are no longer obvious, and that part of the eye obtains very much the colour and appearance of a pearl.

“ To these slight pneumonic symptoms, even without the occurrence of any expectoration whatever, either purulent or mucilaginous, distinctly marked hectic fever often supervene. In other cases, however, after the cough has been long *dry*, as it is called, some degree of expectoration occurs. But in almost no instance has it the appearance either of proper purulent matter or of blood. Sometimes a light tint of blood is observed; but never such a degree of hæmoptysis as is often observed to precede apostematous phthisis. Most frequently, the matter expectorated is a thin watery fluid slightly tinged with blood; and it has very much the appearance of that



sanies which is often discharged from scrofulous sores. When this state of expectoration takes place, hectic fever is seldom wanting to a great degree." (A. DUNCAN'S Treatise on Pulmonary Consumption, p. 26.)

347. In these accurate remarks, we should attend to three observations in particular. First, he says, "*each tubercle may be considered as a lymphatic gland in a particularly diseased state;*" secondly, he says, "*these are the consequences of scrofula;*" and, thirdly, he observes, that "*at the commencement of tuberculous phthisis, neither the cough nor dyspnœa are by any means urgent.*"

348. Scrofula, consisting merely in a peculiar delicacy of the lymphatic system, is no more the *direct* cause of tubercles in the lungs, than it is the *direct* cause of a *white swelling* of a joint, or of a lumbar abscess: it most unquestionably predisposes the system to these affections, but only in the same way that the delicacy of a female's constitution may be said to predispose her to the effects of damp weather, which the powers of a male's



constitution enable him to bear with impunity.

349. If there be any one part of the human frame particularly weak, that part will be disordered from circumstances which will have no effect upon other parts. It is allowed that these tubercles are "*lymphatic glands in a diseased state.*" The desideratum is to find out what produces the morbid action in these glands. Scrofula certainly is not the cause—it only renders them preternaturally weak. It is true we cannot investigate actually the processes going on in these glands in the pulmonary tissue; but I conceive by analogy, by finding out the nature of those glands, by finding out the nature of those causes which produce similar morbid actions in other parts of the body, that we may come to a conclusion on the nature of those bodies in the lungs, which borders, at the very least, on moral certainty.

350. From the very best authorities, we have reason to believe that lymphatic glands, which are scattered all over the body, are similar



to one another in their structure, and that this structure is “ *clusters of coiled vessels.*”

351. These glands form so essential a department in the animal economy, and perform so important a change on the lymph and on some other circulating fluids, that we find no lymphatic vessel entering the thoracic duct without first passing through one or more of these little glands. The coats of the lymphatics are thinner and weaker when they form a part of a gland, than when in their course through the body; so that a fluid which will be conveyed with facility through one of these vessels before it forms a part of a gland, will become pent up in these glands, and sometimes will give rise to considerable irritation\*.

\* “ The frequent congestions of the conglobate glands depend on the stagnation of the lymphatic fluid in their substance, and on the comparative weakness of the sides of the vessels in these parts. The influence of debilitating causes on the lymphatic system acts most powerfully on the glands, which are the weakest part of that system. In such cases, the vessels which enter into the composition of the glands act feebly, or cease to act altogether; the fluids, of which there is a continual accession, accumulate; the most liquid part alone penetrates through the glandular organ, the grosser particles remain, the humour thickens, hardens, and forms congestions of various kinds. If there is a tendency to cancer, such tumours,



352. In scrofula, as I observed before, the whole lymphatic system is peculiarly weak, so that circumstances which would have but little effect upon a person who is not of a scrofulous diathesis, will easily excite the lymphatic glands of a scrofulous person to action. Thus, the measles, hooping-cough, change of weather, &c. very frequently produce a morbid condition in the lymphatic glands in the latter persons.

353. When the bowels are neglected in a scrofulous person, or when he has been exposed to the exciting causes of nosocoilia, (128.) and this latter affection is produced, the liver becomes unable to separate from the blood that quantity of hydrogen and carbon, which the system requires it should; the other auxiliary organs readily sympathize—the skin be-

at the first indolent, become painful, the indurated matter being, in a manner, out of the influence of the vital power, since its vessels are in a state of complete atony, undergoes a sort of putrid fermentation, the consequence of which is a destruction and erosion of the cellular tissue, attended by inflammation of the skin and neighbouring parts. The tumour becomes an abscess, and discharges matter, rendered liquid by the process of fermentation, and so acrid and irritating, that it extends the affection towards all the parts with which it comes in contact."

RICHERAND'S *Physiology*, p. 143.



comes hot and dry—the urine becomes scanty, and the bowels constipated: the whole burden thus falls upon the lungs, (129.) and these, the most delicate organs in the body, become so oppressed, that difficulty of breathing and pain are produced; and those fluids which should have been carried off by the liver and by the other auxiliaries, are partly taken up by the lymphatic vessels, and produce in the glands of the lungs that altered condition in them which constitutes tubercles. When the individual is afterwards exposed to some exciting cause of inflammation, these tubercles become inflamed and suppurate, and thus produce the morbid phenomena, to which, in the aggregate, we give the term pulmonary consumption.

Is this theory of the remote causes of phthisis unreasonable? Is it not corroborated by numerous analogous facts; and is it not proved by pathological deductions?

354. From these few observations on the nature of phthisis, I think we may come to the following conclusions:—First, that tubercles in the lungs, which most frequently are the direct cause of pulmonary consumption, are



lymphatic glands rendered morbid by the accumulation of fluids which should have been carried out of the system. Secondly, that nosocoilia, which determines to the pulmonary tissue those morbid fluids (100.) may be considered the remote and most frequent cause of pulmonary consumption. Thirdly, and lastly, that the most judicious method of treating this disease at its commencement, when it has been unpreceded by acute inflammation of the lungs, is by the adoption of antinosocoiliatic remedies, (132.) with such other measures as the peculiar circumstances of the case may render advisable.

355. My friend Dr. Milligan, of Portman Street, Portman Square, has kindly furnished me with the history of the following cases which he himself treated, and which I consider well worth a perusal, as they establish three important facts, viz., First, that a person although labouring under the symptoms of pulmonary consumption, yet when judiciously treated, may recover. Secondly, that symptoms of pulmonary derangement are frequently produced by a debility of the stomach and intestinal canal, which debility in fact constitutes nosocoilia. And thirdly, that



in such cases the recovery is essentially promoted by—1st, evacuating gently the contents of the bowels;—2dly, by restoring tone to these important organs, and thus enabling them, and the auxiliaries of the lungs to do their duty in the system;—and, 3dly, by diverting any diseased action that may be going on in the lungs, from these organs to the surface of the body by counter-stimulants.

*Case 1st.*—J. D., Esq., an officer in the Army, aged 26, who had suffered from liver disease for a considerable time, latterly in the chronic form, for which he had used repeated courses of mercury, continuing in a state of chronic debility with a teasing cough, was recommended in the month of October, 1822, to travel on the Continent and pass the winter at Nice; he proceeded to the latter place direct, and remained there till February 1823, when urgent business recalled him to England. He arrived in London in the month of March, his general health but little improved. Very soon afterwards he was attacked with catarrhal disease, which was then very prevalent, for which he was treated by laxatives diaphoretics, and expectorants; his health was so far improved in a fortnight, that he was able to walk out. In about three weeks from



this recovery, dyspnœa came on, increased on exercise ; a dry sonorous cough, a sensation in the chest (as he expressed it,) as if the lungs were too large for its walls, and would burst through them ; a dull sense of pain, great debility, and loss of appetite, pulse 92 and small, countenance pale, with purple hue of the lips and cheeks, bowels regular, twenty drops of the *tinctura digitalis* was exhibited *ter die* ; and the *ung. antim. tart.* directed to be applied to the chest till pustules were produced. The urine was increased in quantity, and the dyspnœa soon relieved by these means. The cough somewhat abated, with expectoration of frothy mucus ; the debility continuing, irregular flushings came on, with chilliness, or a degree of shivering in the evening, restless nights and night sweats ; the mucous expectoration became more copious, at times of a greenish or yellowish tint. He was now directed to take one ounce of the *mistura ferri composita*, *ter die*, with the *digitalis* ; to remove to Hampstead, to use moderate horse exercise, and adopt a milk and vegetable diet. The *mistura ferri composita* purged him a good deal at first, so that it was necessary to add a few drops of laudanum to check this effect.



The digitalis was persevered in until vertigo was produced, when it was omitted, and the *mistura ferri composita* continued with the regimen and exercise, and a grain of opium at bed-time occasionally, to procure rest : for six weeks, his health gradually improving under this treatment ; in the month of July it was quite restored ; he gradually returned to his former habits and resumed his duties, and I have been lately informed that he continues in better health than he has had for some years previously.

*Case 2d.*—Miss B., aged 22, a native of Chelsea, of a slight figure, and narrow chest, caught cold in the month of April, 1824, her health not improving under some remedies which had been used, I was requested to see her on the 13th of May, when she complained of a dry, hollow cough, dyspnœa, tightness in the chest, with great debility and loss of appetite, restlessness and night sweats, with irregular hectic flushes, p. 120, and small bowels, confined ; amenorrhœa difficilis ; countenance pale, lips livid, a dry burning heat in the palms of the hands and soles of the feet ; a saline aperient draught was directed to be taken immediately, a draught of one ounce of



the *mistura ferri comp.* with fifteen drops of the *tinctura digitalis* ter die, and the *ung. antim. tart.* applied to the chest night and morning, till pustules were produced. A milk and vegetable diet to be adopted, this plan was persevered in for five weeks, withdrawing the *digitalis* so soon as it produced nausea and giddiness; her health was completely restored; and she has since got more plump and fat than she had been previous to her attack.

*Case 3d.*—Elizabeth Moore, aged 29, a servant, February 24th, 1825, complains of slight pain in the chest, debility and frequent expectoration of mucus, with dyspnœa, was attacked about twelve months since, with pain in the chest, cough and fever, and from that period has continued in delicate health, pulse 84, t. clean, and moist, b. open; has taken some aperient medicine and cough mixture lately.

R. *Mist. Ferri Comp.* ℥viiij.

*Tinct. Digitalis*, ʒi

*Capiat Coch. ampla* duo ter in die

*Illina. paululum Ung. Antimon. Tart. Sterno*  
nocte maneque ad effectum.

A milk and vegetable diet.

This treatment was persevered in, omitting the *digitalis* when symptoms gave notice of its



being carried sufficiently far, till the 28th of March, when she was dismissed cured.

The objects kept in view in this practice, has been to diminish the action of the heart and arteries, as well as the irritability of the system, and to increase the action of the absorbents by the digitalis. To give tone to the stomach and bowels, and, consequently, to the general system, by the mist. ferri comp. and to determine the blood to the surface, by the ung. antim. tart.

When the pain is fixed and severe, I think small bleedings should be adopted.

356. The following case which was treated by a Mr. Davies, a very steady and intelligent pupil of mine, and on whose accuracy of observation I can place every reliance, I deem worthy of particular attention.

Dear Sir,

Dec. 28th, 1824.

Having heard you mention that you were anxious to be put in possession of as many facts as possible, relating to the *sympathy* existing between the *stomach*, *lungs*, and *liver*, I now embrace this opportunity, of offering for your consideration the following case,



which came more immediately under my own notice, the progress of which I have attentively watched, and which I treated according to the principle of sympathy between these organs, which you so often have explained in your Lectures.

Miss W-----, aged 36, had for the last two or three years, been labouring under symptoms of pulmonary affection; she had been attended by many medical men, holding high stations in their profession; but her case baffled their skill, as the disease fluctuated according to the state of the weather, &c. At the commencement of the month of October, 1824, she applied to me, her chest having become greatly affected, whilst the other symptoms increased in proportion: the pain was chiefly situated in the right side of her chest, and she was impressed strongly with the idea that she was in a *decline*, and I candidly confess, that some time elapsed 'ere I was enabled to form an opinion as to the exact cause or nature of her complaint; she had, at this stage of the disease, expectorations similar in colour and consistence to that of pus, and which, in truth, I suspected was so, until on closer examination, it proved otherwise:



she likewise laboured under a dreadful cough, breathed with difficulty, and finally, became extremely weak and emaciated; the pain in her right side was much increased when she lay upon it: great languor, indolence, loss of appetite, and dejection of spirits prevailed. She attributed her disease to an ague, with which she had been afflicted, about three years since, followed by an attack of the jaundice; since which time she has been in the state as described above, until the end of the month of September, when all the symptoms increased. Having considered all the circumstances of the case, I came to the conclusion, that her complaint arose from a derangement in the alimentary canal, as she informed me whenever *purgatives* were administered, the pain in her chest was considerably relieved, which, as I conceive, tends to prove the great sympathy existing between these organs. On the 12th of October, the pain in her chest became excessively violent, so much so, that it alarmed herself and friends, therefore to be convinced of the truth, that purgatives possessed the power of relieving this pain, I ordered three grains of the submuriate of mercury to be taken at bed-time, and the following draught in the morning:—



R. Infus. Sennæ, drachmas sex,  
 Sulphatis Magnesiæ dra. quatuor,  
 Tinct. Cardamomi Comp. drac. j.

Fiat haustus mane sumendus.

This, I was happy to find, had the desired effect, the symptoms becoming considerably relieved; however, as might have been expected, they became in a day or two nearly as violent as ever, and then I determined upon treating the disease more regularly, in order, if possible, to enable the lungs to do their duty, by relieving the bowels; with this intention, I ordered the following alterative medicines:—

R. Pilulæ Hydrargyri;  
 Extract Comp. Colocynth:  
 a a scrupulum unum;  
 Olei Carui gutt. ij.

Fiat massa et divide in pilulas xviii. capiat ij alterni quaque nocte.

R. Infusi Gentian Comp. ℥vi  
 Spirit. Myristicæ ℥ij.

Fiat mistura Capiat Cochlearia tria, alterni quaque nocte post pilulas.

These medicines, with other cathartics, were continued for some time, when the most decidedly beneficial effects were derived from them. I requested her to remove to the country for a short time, with the hope that a change of air would expedite the cure. On her return, I was happy



to find that she was perfectly restored to health; her countenance, which was before pale and emaciated, was now diffused with a healthy glow, and her general appearance so far improved, that I am of course led to suppose that the diseased action of the lungs is completely eradicated; the pain in her side, the expectoration, and all other symptoms, have entirely disappeared. If, Sir, you conceive this case worthy of your attention, it is entirely at your disposal. And now, dear Sir, permit me to subscribe myself, with great respect,

Your grateful and obliged Pupil,

WILLIAM DAVIES.

To W. W. SLEIGH, Esq. &c.

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It had been my intention to have discussed in this work, the pathological condition of the brain, and of the viscera of the thorax, and of the abdomen; and to have pointed out how nosocoilia produces nine-tenths of the morbid affections of these viscera; but I shall defer this subject for a second volume, which I shall publish as expeditiously as various professional avocations will permit me. I shall therefore conclude this work with a few general, but I conceive, important rules.

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## CHAP. VII.

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### SECTION I.

*Four Cardinal Rules for the regulation of Medical and Surgical Practice.*

357. *Rule 1st.*—The pathological condition of the part or organ affected, or in other words, the *proximate cause* of morbid phenomena, should be in every case carefully and minutely investigated.

*Rule 2d.*—The remote and *proximate* causes should be removed.

*Rule 3d.*—The antiphlogistic, tonic, and antinosocoiliatic regimens, should be regulated according to circumstances.

*Rule 4th.*—The object to be accomplished by the administration of any remedy, or by the adoption of any means, for the subduction of diseased actions, should invariably be kept in view.



358. *Rule 1st.*—This simple but important rule cannot be too often, or too emphatically recommended to the attention of the practitioner. There is no case in the practice of physic or of surgery where it is not applicable, and where it is not of the greatest moment; for every remedy that is prescribed without a knowledge of the *pathological condition* of the part affected, is ordered at random, and is consequently as likely to do harm, as to do good. Whereas, attending to this rule not only obviates the necessity of adopting empirical and uncertain remedies, but is calculated in a peculiar manner to lead to the adoption of the most simple and efficacious means of subduing the diseased action. I therefore invariably, when called to a patient, put the following question to *myself*—what is the internal condition of this part, or what is the nature of this morbid action going on, which produces these morbid phenomena or symptoms? In proportion as this question can be answered, the practice adopted is calculated to be beneficial; and I may venture to affirm, that nine-tenths of those who die of diseased affections, perish in consequence of the nature of the morbid action going on not being pro-



perly investigated, or the non-attention to this rule.

359. *Rule 2d.*—The directions which have been hitherto given by medical men on this subject, have been entirely confined to the removal of the *remote* or *exciting* cause as it has been termed. Thus they have said in corroboration of the necessity of attending to that rule, and very properly, “who would hesitate to extract the splinter from his finger, or take the foreign particle out of his orbit, which produces pain and irritation? But while I grant all the importance possible to the removal first of the *remote* cause, I beg leave to state that the removal of the *proximate* cause is of paramount importance. In many instances the *exciting* causes have only acted for the moment, and the effects only remain; while in other cases the *exciting* cause cannot be removed as in compound fractures, &c.; but where there are morbid phenomena, there must be a peculiar action going on, which peculiar action is the *proximate* cause, and this must be removed. Thus, an increased action of the blood-vessels is the *proximate* cause of inflammation—a weakened action the *proximate* cause of de-



bilitas genuina and all its modifications, whether local or constitutional—in the former case, the *proximate* cause is removed in proportion as we diminish action; in the latter case, it is removed in proportion as we increase action. According to this principle should every disease be treated.

360. *Rule 3d.*—There are many reasons why every regimen we adopt for the subduction of diseased actions should be regulated by circumstances. In the first place, although it be highly proper to anticipate an attack of inflammation, as for instance when a person has received an injury, yet we should consider that nature herself is in fact to heal the wound, and for this purpose requires a certain portion of stamina; so that we, by an over anxiety to prevent the occurrence of inflammation, may so diminish the powers of Nature, that she could not produce that action which is indispensable to the reparation of the part. The following are those circumstances which should principally regulate us:—

- 1st.—The age of the person.
- 2d.—The sex.
- 3d.—The constitution.



4th.—The nature of the part affected.

5th.—The nature of the injury.

6th.—The degree of inflammation.

7th.—The period of the infection.

8th.—The climate.

9th.—The season of the year.

10th.—The residence of the individual.

361. 1st.—*The age of the person.* Very young or very old persons do not bear depletion well: therefore, inflammatory affections in such characters will frequently be subdued by the loss of a quantity of blood that would have but little effect upon a person in the prime of life. That period when we can with greater boldness and impunity adopt the antiphlogistic regimen, is between the age of sixteen and forty, but it will still depend much upon the other circumstances. And during this period, should the *affection itself require it*, we may take an ounce of blood for every year. If, for instance, a man at forty, of a plethoric habit, in a warm climate, or in the Summer season, be attacked with violent inflammation of the brain, lungs, stomach, or intestines, he may lose, with impunity, nay, with considerable advantage, forty ounces of



blood. Although the above may be adopted as a *general* rule, yet I beg leave to impress upon the reader's attention, that the *quantity* of blood is not so much to guide us, as the *effect* the loss of blood produces upon the system. If for instance, I purposed detracting twenty ounces of blood from a person, and that ten ounces produced syncope, I would forthwith cease to let more, being perfectly satisfied that I had done enough for that time. (359.) The object to be accomplished should always be kept in view. In the administration of antinosocoiliatic medicines, (160.) the above circumstances should also be attended to, and particularly the age of our patient. I scarcely need observe, that adult persons not only bear with greater ease active cathartics, but actually require them in greater proportion than young persons. However true this generally is, yet some instances occur where children require\* in-

\* I had occasion some time ago to give a son of mine, who was only two years of age, and who had all the symptoms of hydrocephalus internus, with obstinate constipation of the bowels, six grains of calomel every four hours; and a strong infusion of senna, with tincture of jalap, every twelve hours, for three days, before I could produce a plentiful discharge from



credible doses of medicine to clear their bowels. Every one of the ten circumstances (360.) should regulate our conduct in this part of practice as well as in the detraction of blood.

The nature, as well as the quantity of tonic or stimulating remedies should depend very much upon the previous habits of our patient, upon the degree of debility, and upon his age. Debility, more or less, always succeeds inflammatory affections, and considerable debility constitutes the second stage of putrid fevers. (305.) Should our patient have been a free liver, a portion of stimulants which would have considerable effect on the generality of persons will be found to have little, if any, effect upon him; therefore those stimulants before mentioned (169.) should be administered, so as to be accommodated to his previous habits.

362. 2d.—*The sex of our patient.* Generally speaking, females are more delicate, more irritable, and their systems more easily affect-

his bowels; upon the occurrence of which, the symptoms of water on the brain gradually diminished, and he was ultimately restored to perfect health.



ed than males. It is true there are some females who are much stouter, and their constitutions more robust than some individuals of the other sex; but these exceptions do not at all affect the general rule. When, therefore, we have to adopt the antiphlogistic regimen in treating an affection in a female, we are justified in believing, first, that there is no necessity to carry it as far as in males; and, secondly, that it would be attended with evil consequences, as great debility, dropsy, and a detrimental loss of the vis vitæ.

In administering cathartics, we should also act with the same prudential caution. And in adopting tonic or stimulant medicines, we have every reason to expect the desired effects from a much less quantity of them, and from those which in their nature are less powerful; but it should not be forgotten, that exceptions to this and to every other rule will occur, and that the nature of the symptoms must, on the whole, direct our conduct.

363. 3d.—*The Constitution.* This is a circumstance that on no occasion should be forgotten. No matter what part of the heal-



ing art we are adopting, the constitution of our patient should be seriously and fully considered. His previous habits—his present line of life—his present temperament should influence our practice in a great measure. The characteristics of the four temperaments mentioned in (49, 50, 51, 52, 53,) should be well known; for by attending to these particulars, we are enabled not only to adopt the best measures for removing the diseased action, but we may very often foretel the result of the case. In adopting the antiphlogistic regimen, particularly bleeding, the quantity of blood necessary to be taken will in a great degree depend upon the constitution of the individual. We can with safety and propriety detract a much greater quantity of blood from a plethoric person, that is, a person of a sanguineous temperament, (50.) than from a person of either of the three other temperaments. (49.) With *safety*, because he can bear with greater impunity the immediate loss of a great portion of blood; and with *propriety*, because there is not the same danger of so diminishing the vital powers that reparation (if it were necessary in the case) could not afterwards take place. Further, inflammatory affections



are much more violent in the sanguineous temperament (50.) than in any other, and in these therefore the loss of a much greater portion of blood is absolutely necessary.

364. 4th.—*The nature of the part affected.* This is in truth a very important consideration; and the quantity of blood to be taken should always depend upon the importance and delicacy of the organ or part affected. Thus for instance when the brain, lungs, and intestinal canal are the seat of inflammation, the most active means must be adopted; as much blood should be detracted as the circumstances 1, 2, and 3, will warrant us. The rank which the organs just mentioned hold in the animal machine, and the importance of the functions they perform in the system, render an affection of any of them of the greatest moment, and demand the utmost exertions to save the individual from destruction. Whatever is to be done in such cases should promptly be accomplished; for loss of time under such circumstances is attended with irreparable evil. Inflammation in most other parts of the body may, comparatively speaking, terminate with impunity by sup-



puration, and we may sometimes run the risk of it; but in inflammation of the brain, lungs, or intestinal canal, we never should: matter could not be formed in the brain or lungs without producing such disorganization of them as would be incompatible with their functions, particularly the lungs; and inflammation of the floating viscera of the abdomen most generally extinguishes life ere it terminates by suppuration. The importance then of attending to the nature of the part affected, to direct us in taking a sufficient quantity of blood cannot but be obvious.

365. 5th. — *The nature of the injury.* Almost the only time when it is necessary to attend to this circumstance is when we want to anticipate or prevent the occurrence of inflammation; but then it should be recollected, that although the effects, or what commonly are termed the symptoms of inflammation are *morbid* phenomena, yet that inflammation itself is the means Nature adopts for the reparation of injured or mutilated parts, and for the expulsion of noxious or morbid matter. If the intent of any who bleed in such cases be to prevent the occurrence of *all* inflam-



mation, they act extremely wrong: the object of bleeding after an accident has occurred, should be to check an undue or unnecessary degree of inflammation; and in fact to keep it in bounds, for by so doing we facilitate Nature's salutary designs. If, therefore, the injury sustained has been a very considerable one, as a compound fracture, we should detract blood with great caution; for Nature will, before the parts be re-united, require all her strength to sustain the system under a tedious process of suppuration, and notwithstanding no blood had been drawn at the beginning, yet too often Nature sinks in the contest. Therefore, when compound fractures occur, we should never detract blood unless the majority of the other circumstances (No. 1, 2, 3, 8, 9, and 10,) warrant us. On the contrary, when there is an injury of the bones of the cranium, we will be justified in detracting blood freely, for two reasons, first, the nature of the contained organ is such that inflammation of it is likely to occur, which is always attended with much danger; (cir. 4.) and, secondly, there will be no tedious process of suppuration afterwards which would require all the powers of Nature.



366. *6th.—The degree of the inflammation.* This circumstance is to be considered our chief guide—it is this which makes us consider any of the other circumstances, and for the removal of which, our assistance is at all necessary: I need hardly therefore observe, that the means we adopt for the removal of the inflammation should be proportioned to its degree. Any rule proposing that a certain portion of blood should be detracted in inflammatory affections is not only absurd, but highly injurious, and calculated to produce much evil.

The same rule is also applicable in the administration of tonic or cathartic medicines. In proportion to the debility in the former instance, should we order tonics and stimulants. And in the latter, in proportion to the degree of nosocoilia should we order cathartics. The other circumstances should also be taken into consideration.

367. *7th.—The period of the affection.* From this circumstance not having been properly attended to, the most serious errors have been frequently committed. Bleeding has been adopted when tonics should have been



administered, and tonics ordered when bleeding should have been adopted. (313.) But still, if due attention were paid to the nature of the symptoms, to the pathological condition of the system, and to the object to be accomplished, there would be but little danger of falling into these and similar errors. If, for instance, I was lately exposed to contagion, or to the exciting causes of fever, although when the febrile action would *actually* commence, I would *then adopt* the antiphlogistic regimen, yet I would at *first* (that is previous to the accession of the febrile symptoms) endeavour to strengthen the powers of Nature by powerful stimulants, that she might, if possible, expel the morbid matter, or restore the suppressed or interrupted function, (144, 145, 146, 147.)

368. *8th.—The climate.* Authors of medical treatises have almost at all times paid great regard to the climate. And in proportion as our knowledge of the human body increases, do we see the propriety and the great utility of taking into our most serious consideration the nature of the climate in which we practise. The inhabitants of *very* warm cli-



mates are naturally predisposed to inflammatory affections, and bear with great ease the most powerful remedies. Circumstances which will have little effect upon an European, (note to 168.) will produce the most violent morbid actions in an inhabitant of the West or East Indies, &c. And in those countries we are not only justified in pushing the antiphlogistic regimen to a much greater degree than in England, but we must do so in order to conquer the diseases of those countries. In very cold climates, on the contrary, we can adopt the tonic and stimulant regimens with much greater boldness than even in this or in other countries. And even the practice in England, and on the Continent to the south of us, differs very considerably. In France, the physicians say they dare not detract blood, or purge in the same degree that we do in England!

369. 9th.—*The season of the year*, as it may be similar to either of those climates, should regulate our practice. In the Summer season, the method should approximate to that adopted in warm climates, and in the Winter season it should be similar to that kind



adopted in cold climates; but of course regulated by the other circumstances.

370. 10th.—*The residence of our patients.*

A residence in a large and crowded city is always calculated more or less to enervate the constitution—to render it peculiarly prone to disease, susceptible to the influence of morbid matter, and easily acted upon by any remedies we may adopt, whether under the head of the antiphlogistic, tonic, or antinosocoiliatic. On the contrary, we may say, that a country residence (*ceteris paribus*) invigorates the constitution, renders it more or less capable of expelling morbid matter, and renders it necessary for more active measures to be adopted for the removal of any morbid actions that may occur. For the reasons why the former circumstance so debilitates the constitution, see (115, 116, 117, &c.)

371. *Rule 4.*—The last Cardinal Rule, *that the object to be accomplished, &c. should always be kept in view*, is, I consider, one of the most important rules that can possibly be given for the scientific practice of the healing art. This rule is not confined to any particular



disease or class of diseases, but is applicable equally to all. It not only constitutes the line of demarcation between scientific and empirical practice; but it actually directs us in such a plain and certain path, that the laws of Nature, not the principles we act upon, are the cause of failure. And I may venture to assert, that failure occurs in nine cases out of ten in consequence of not acting according to this rule. When, for instance, it is said blood should be detracted in inflammatory cases, or tonics should be given in cases of genuine debility, except the object in detracting blood be clearly understood, it will, in many instances, be carried too far, and in other cases a sufficient quantity will not be taken; and it is exactly the same with the administration of tonics. But it may be said, how are we to find out the object exactly to be accomplished in adopting any particular measure? I answer, by simply attending to my first rule. (358.)

372. There is but little utility in a man's knowing that a certain medicine or remedy has proved beneficial in a certain disease, except he is acquainted with the peculiar action that is going on, and the object that is to be



accomplished by the administration of the medicine; for, in the first place, the morbid affection he is treating may not be exactly the same disease in which the remedy had been beneficial; or, secondly, it may not be exactly the period of the disease when the medicine should be administered.

373. Thus, for instance, the application of blisters to a joint affected with a white swelling is strongly recommended: now, if a man be not acquainted with the object to be accomplished by this remedy, he will probably apply it at a period of the disease, when it will be the cause of much mischief. Whereas, if he considers that there is a diseased or morbid action going on in the joint, he must know that the object in the application is to divert the action to the surface, and thus afford Nature an opportunity of stopping the internal action (48.): hence, friction, electricity, &c. are with the same intent ordered.

374. Again, when it is necessary even to tie an artery, except the surgeon knows how the ligature is to act in producing an obliteration of the vessel, or in other words, the ob-



ject to be accomplished by the application of the ligature, he cannot possibly know how tight to make it, or where exactly to place it, &c. and therefore, when he succeeds it is only by chance.

In fact, the peculiar beauty and value of modern surgery consists in knowing the object to be accomplished ; and in truth, a surgeon should not adopt any measure without asking himself the questions, how is this remedy to act? or why do I dress a wound in this or that way? or why do I perform such an operation?

375. These are simple but most important questions: so that while this plan procures a decisive, prompt, and certain course of practice, every other method is attended with considerable uncertainty, and ambiguity.

END OF THE FIRST VOLUME.



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OF

## THE SECOND VOLUME.

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- 2d.—The Pathological Conditions of the Viscera of the Head, Thorax, and Abdomen, discussed.
- 3d.—Spasm proved to depend upon a Morbid Condition of the Nervous System; the predisposing cause of which Condition is Nosocoilia.
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