Lectures on the elements of pathology, and on the theory and practice of physic : exhibiting the causes, symptoms, prognosis, diagnosis, and treatment of diseases, including typhus, scarlet, and puerperal fevers, and diseases of children / by John Armstrong ; edited by Thornton G. Thompson.

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LECTURES

ON THE

ELEMENTS OF PATHOLOGY,

AND ON THE

Theory and Practice of Physic,

EXHIBITING THE CAUSES, SYMPTOMS, PROGNOSIS, DIAGNOSIS, AND TREATMENT OF DISEASES,

INCLUDING

TYPHUS, SCARLET, AND PUERPERAL FEVERS, AND DISEASES OF CHILDREN.

BY THE LATE

JOHN ARMSTRONG, M.D.,

ETC.

EDITED BY THORNTON G. THOMPSON, M.D. ETC.

"My object is, by every possible effort to reach the truth; and if error lie in my way I must touch it—tear it—trample it under my foot."

LECTURE XIV. ON THE PLEURA.

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EDITOR'S NOTICE.

The Volume now presented to the Profession contains the whole course of those admirable Lectures delivered in the Webb-street School of Medicine, by the late John Armstrong, M.D., a teacher of rare acquirements, who possessed a natural eloquence, which shed a lustre on his scientific knowledge, and gained for him the title of "the most successful lecturer in the British metropolis."

The Editor of this edition has carefully corrected the errors which existed in previous versions of these invaluable discourses, and omitted those recapitulations which only harass and fatigue the reader.

Dr. Armstrong held notions which many considered peculiar—for example, contagion in Typhus Fever; but, it must be admitted by every admirer of true genius, that his opinions were entertained conscientiously, and enforced with an earnestness which indicated a con-

viction of the truth of the doctrines he taught; and those who doubt the soundness of his views, readily concede, that Dr. Armstrong's ingenuous and eloquent advocacy of his opinions, require deep consideration before they are rejected.

Here, then, is a record of my late respected teacher's "TWENTY-FIVE YEARS' EXPERIENCE AT THE BED-SIDE OF THE SICK,"—a record without *abridgment*, and in a form, and at a price which will render the volume accessible to every member of the profession. I have transcribed a considerable portion of the Lectures, as revised by Dr. Armstrong, and published in the *Lancet*, which, with the notes taken by myself when attending his instructive discourses, has enabled me to lay before the profession a useful and elegant compendium of the THEORY AND PRACTICE OF MEDICINE, and a record of the honest convictions of an amiable and accomplished Physician—a humane and an excellent man.

THORNTON G. THOMPSON.

London, October, 1837.

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LECTURES

ON THE

PRINCIPLES AND PRACTICE OF PHYSIC.

INTRODUCTION.

THE object of these Lectures is to illustrate the principles and the practice of physic. By the principles of physic, I mean, certain general rules legitimately deduced from observation, not only of the symptoms during life, and the morbid appearances discovered by examination after death, but likewise of the effects of remedies under the various circumstances of their exhibition; and by the practice of physic, the immediate application of these rules or more ultimate facts to the prevention, palliation, or cure of human maladies.

In the early ages of the world, men instinctively attempted to relieve sufferings before they began to think about the abstract nature of disease; and thus, as Celsus truly remarks, the practice preceded the principles of physic.

Herodotus mentions that the Babylonians exposed the sick in the market places, in order to receive the opinions of those who passing by, might have been similarly afflicted. In the first states of society, unquestionably, physic must have been practised generally, as it is at present among the uncivilized tribes of North America. Some one, in such a state, becomes more skilful than

his fellows, and is consequently distinguished above them; and by such occurrences, in process of time, the foundation is at length laid for erecting physic into a separate profession.

History informs us that, at a more advanced æra, the priests generally became the physicians. In ancient Egypt we find, that they had sacred books, written in hieroglyphics, containing whatever medical knowledge they possessed; and while some applied the remedies, others prophesied and performed magic rites in their temples, the strong holds of ancient superstition and deception. In the time of Herodotus, a change seems to have taken place, for he remarks that a division of labour then existed, some practitioners having been confined to the treatment of the affections of the head, some to those of the eye, and some to those of the liver; and we find a similar but voluntary division now in the British metropolis, where, in particular, so many practise *hepatically*, according to the prevailing fashion.

The Greeks, who were the followers of the Egyptians in almost all departments of art and science, borrowed also their superstitions, and, in like manner, had their presiding divinities, their temples, and their imposing services; but, true to the Egyptians, they left the cure principally to nature, attending, however, to air, rest, diet, drinks, and the management of the mind. Hippocrates is said to have been the first man who separated physic from religion, and by thus divesting it of the superstitious adjuncts then in use, he set a distinguished example of studying physic in the right way. Praxagoras, Chrysippus, Hierophilus, and Erisistratus, pursued nearly the same path, and endeavoured to extend their researches; but still, like Hippocrates, they retained many prejudices descended from past times; for the mind takes a tinge from surrounding circumstances, as light does from the medium through which it passes.

The school founded at Alexandria was modelled after the Hippocratic method, and thus physic was divided into the dietical, medicinal, and chirurgical, a much more rational division than the modern one of physic and surgery, since the science is one and the same. The empirics and dogmatists soon afterwards appeared, the one sect depending entirely on observation or

experience, the other on reason, which they contended was sufficient where observation failed. Observation, however, and reason, are both necessary in the study of physic. Observation is the labourer which furnishes the materials, and reason the architect which directs the arrangement for practical purposes. Themison, adverse to both, founded the methodic sect, who deduced their treatment from the mutual and apparent resemblance, the strictum and laxum of affections. The medical world was thus divided, when Galen arose, and professed to revive the doctrines of Hippocrates, which he blended with the philosophy of his own time. He assumed the existence of three spirits. The natural he made to preside over the brain, and to influence the voluntary power, and the internal as well as the external senses; the vital, the functions of respiration and circulation; and the animal, those of generation, secretion, and nutrition. Some of his opinions have a remarkable similitude to those of our times, and, perhaps, he was right in supposing that a subtle fluid was elaborated from the blood, and connected with all the functions. His pathology was humoral. He held that there were four fluids—the blood, phlegm, yellow bile, and black bile; from the different combinations of which different temperaments and different diseases arose. His remedies were simple, and chiefly drawn from the vegetable world.

Physic remained stationary, or made but little progress for many generations; the speculations and practice of Galen being still predominant. At the downfall of the Roman empire, science fled, and sought a refuge in the East; but the Arabians effected nothing remarkable, if we except the introduction of aromatics and mild laxatives, whilst they neglected anatomy, and obscured pathology by an additional cloud of conjectures. In the sixteenth century, however, the authority of Galen was shaken by Paracelsus, who founded a more chemical philosophy and practice, the influence of which still exists in the common abuse of mercurials and antimonials. The next memorable change occurred through the discovery of the circulation of the blood by our great countryman, Harvey; and shortly afterwards, a mechanical was blended with a chemical theory. Yet many of the crude notions of

Hippocrates prevailed, as we find exemplified in the writings of Sydenham, who, nevertheless, was a man of genius, for he detected the fallacy and danger of the hot regimen, and attempted to introduce the cooling one in febrile affections. Indeed, advancing into another age, he left his contemporaries far behind him, who endeavoured to destroy his reputation by slanderous falsehoods. But secondary intellects miscalculate their power, when they suppose they can destroy the reputation of genius, which revives even from the tomb, and again breathing, and informing, it has an immortality in the respect and admiration of present and succeeding ages. Nay, the very college which is recorded to have been amongst his opponents, has bent before his shrine, as if in atonement for those prejudices and passions which formerly shrouded the splendour of his name. Boerhaave next attracted attention, but, like Galen, he merely attempted to unite the doctrines of Hippocrates with the sciences of his own times. Stahl, and then Hoffman followed, who introduced the doctrine of the presiding principle and of spasm, which, in fact, was but a mere modification of the opinions of Hippocrates and Themison. It has been said that knowledge is a circle in motion, and certainly the same things are every now and then turning up and down in the revolutions of time. The same thoughts have existed in all ages, only they have been differently expressed.

Cullen succeeded, who, notwithstanding all the panegyric which has been bestowed on his memory, introduced nothing original, for his system is a mere metaphysical "thing of shreds and patches." Cullen was not a man of genius, though extremely plausible withal. Genius never is content with the mere productions of other men, but produces something of its own ; it collects, arranges, and combines materials from its own observation, so as to create, as if by a spell, what is new and useful. Brown, whom Cullen seemed to despise, had the ascendant in talent, and if he had paid more minute attention to symptoms and morbid anatomy, and if he had not generalized so sweepingly respecting excitability, he would have done much good to the science. Darwin improved on the system of Brown in giving more ample illustrations, though, like him, he carried his conclusions too far ; yet there

can be no doubt that many affections are connected with increased and diminished excitement, the organic results of which were most strangely overlooked by both these ingenious speculators, who may be ranked among the last, and not the least, in the history of conjectural systems.

If I were to enumerate the causes why physic made so little progress in ancient times, the four following would be the most conspicuous.

First. The defect of elementary information, and especially in anatomy and physiology, through the horror which existed as to human dissections, so that men were not only ignorant of the healthy structures and functions, but knew nothing of those organic effects on which symptoms depend.

Secondly. The existence of false philosophy, which is generally the offspring of presumption. Vain men form imaginary laws in the closet, and attempt to bend nature to them, but while these have been perpetually fluctuating, nature has remained eternally the same, and her laws can only be deduced from an accurate examination of phenomena as they actually exist. Fatalism was very prevalent in the ancient world, and must have been unfavourable to observation, as we now perceive it is in modern Turkey.

The *third* cause, was the cunning of the faculty, who studiously concealed their ignorance by the affectation of knowledge. The ancient world was composed of two principal parties, knaves and fools; and the knaves contrived to keep all the power in their own possession, by making philosophy a mystery, and by keeping the people in a state of profound ignorance.

The *fourth* cause was the gross ignorance of the public. Ignorance is the parent of credulity, and when an enlarged and liberal spirit does not exist in the public mind then we find craft and knavery prevail. This is an age, however, in which it would be in vain to prop up false principles and practices by any affected reverence for what is called the wisdom of antiquity, which was distinguished by little else than weakness of intellect in the inductive sciences, and which was young in knowledge compared with

the present, rich in accumulated facts and inferences of numerous minds successively enlightening each other.

If we were to trace back the causes why the present times have become so favourable for the development of science, we should perhaps find that the three following have had great influence on the progress of human improvements.

First, the revival of ancient literature. For many centuries the intellectual world lay wrapt in a profound gloom, till at last the genius of ancient Greece and Rome arose, like a new Sun, and the gross darkness gave way, it breathed like a spiritual agency, and the deluge of ignorance began to subside. But though the study of the Greek and Roman writers was at first highly beneficial, particularly as one of these languages became the medium of thought among men in different countries, yet Greek and Latin have degenerated into a mere study of words scholastically, without a reference to things, and we now have in some Colleges the mockery of a mere verbal examination in the Latin tongue, when books are no longer written and when lectures are no longer delivered in that language. But corporate bodies seldom do any material good to medicine, because not being responsible to, they are not influenced by, public opinion.

Secondly, the Reformation effected by Luther and others, which rooted up superstition and slavery in some parts of the earth, and planted in their stead religion and liberty, the growth of which is as favourable to intellectual as it is to moral improvement. The general state of intellect influences that of particular professions; and this is so especially the case with physic that it is now the furthest advanced where most general information prevails among the people at large.

Thirdly, the discovery and extension of Printing. This circumstance alone places the modern world in an entirely different situation from the ancient world. The human mind advances more now in a few years than it did in centuries before. By aid of the press, truths are not only rapidly and widely diffused, but are preserved embalmed by it for the benefit of posterity, so that useful information can never be lost. These three causes, arising

separately and concurring at last, have elevated the human mind, and have contributed to produce that simplicity and independence in the medical character, which is a happy contrast to the duplicity and crouching of former times.

In this age a new sect of men has arisen in the profession; men who think, act, and observe for themselves: With them, the question is not, what has been said or sanctioned by authorities? But whether the proposition be false, or whether it be true? Whatever is false they reject, whatever is true they admit and maintain. Among this sect I have voluntarily placed myself as a humble, but a firm adherent, not to attack individuals, but openly to oppose systematic and established errors; aye, and, if possible in the accumulated strength of this age, to grasp, and rend and wrench away the forms and the fooleries, the mysteries and the mummeries by which physic has been incumbered and obscured, and to present it in the plain and palpable simplicity of common sense.

In the study of Physic, *Five* points are to be considered of elementary importance.

Anatomy and Physiology certainly form the *first* of these. Without a knowledge of Anatomy and Physiology, no one can possibly become a good practitioner. No man can repair a machine, of the structure of which he is entirely ignorant. As pathology is the mere contrast to physiology, which unfolds the various functions as performed in a state of health; so it becomes of course necessary to understand the one, before we can comprehend the other. But anatomy and physiology are only auxiliaries to the principles and practice of physic or surgery, and should be studied with a strict reference to these.

Secondly, an accurate acquaintance with the rise, progress and present state of the symptoms, in conjunction with constant endeavours to discover the structural conditions on which they depend.

Thirdly, minute examination of the body after death. For it is in this way only that we can ascertain the effects of disorder or disease upon the different structures. By this mode of proceeding we not only remove conjectures, but ascertain, in many cases, the

cause of death, and thus make close approximations to first principles of pathology.

Fourthly, a knowledge of the operation of medicines as modified by the various states of the body under which they are given. The latter is a point of great importance, because the same remedy under different circumstances produces different effects, which must be noted and carefully classed, that we may acquire precision in the application of the means which we employ.

Fifthly, to these I shall also add the regimenial and mental management, which relates not only to diet, drinks, and other things, but also to mind, and which is fully as important as the medical management.

If you adopt this mode of pursuing the science, you will arrive at a distinct pathology, and at a successful practice. Once for all let me recommend you to study the practical part of your profession at the bed-side of the sick, and to be cautious in the selection of books, the study of which, when it is excessively and indiscriminately indulged, is apt to shut a man out from the more important study of nature.

Before proceeding to give a general, and therefore a necessarily brief and imperfect, view of the principles and practice of physic, it may be proper to inquire what is meant by the term health. All the functions of the body might be arranged under three heads. 1, The Mechanical;—2, The Chemical;—and 3, The Vital. The mechanical chiefly relate to the heart and vascular system; the chemical, to the circulating fluids or their secretions, and the vital functions to the brain and nervous system. Each class of functions depends, in a great degree, for its performance on the other. Their harmony is *health*, and their disturbance is *disorder* or *disease*. But, as their functions are intimately connected with certain parts, we must seek for the cause of disturbed functions in the condition of these parts, solid or fluid. At first sight the subject might seem confused, and hence some arrangement becomes necessary in order to make the descriptions distinct and intelligible.

For the sake of convenience, all affections might be arranged under two great classes, the first *acute* and *sub-acute* affections, the second, *chronic* affections.

The first arise quickly, and go through their course in a comparatively short time, and are therefore called *acute* or *sub-acute*.

The second begin and advance slowly, and, from occupying more time than the former class, are called *chronic*.

The first class of affections arises from *remote* occasions, which may be divided into *common* and *peculiar*. The common are the ordinary agents of Nature, which might, according to their effects, be subdivided into depressants, stimulants, irritants, and interruptants, terms which I shall afterwards explain, for it will be necessary for me to define all such general or abstract terms in this course of Lectures, and I shall prefer plain English to Greek and Latin technicalities.

The *common* causes produce several effects, which, once ascertained, will be found uniform and referrable to certain conditions—1st, *Common congestive;* 2d, *Common simple;* and, 3d, *Common inflammatory fever*,—when they lead to acute and subacute affections.

The *first* variety is marked by the diminution of the heart's action, and the diminution of the animal heat, with oppression of the operation of some particular organ, mainly through venous congestion.

The *second*, the simple variety, is marked by the increase of the heart's action and the increase of the animal heat, without any marks of external or internal inflammation, all the organs being excited, but none absolutely inflamed, as the blood is equally distributed.

In the *third* variety, or inflammatory fever, there is an increase of the heart's action, and an increase of the animal heat, accompanied by symptoms of internal or external inflammation. Now this inflammation may take place in different organs, sometimes in the brain, sometimes in the lungs, and sometimes in other parts of the body. Different individuals shall have inflammations in different parts, produced by the same remote occasions, according as these parts may be particularly predisposed, so that the common inflammatory form has an extensive range of character.

The *peculiar agents*, for example malaria, the specific contagions, and atmospheric constitutions also produce *congestive*, *sim-*

ple, and *inflammatory* fever, but each variety is blended with some peculiar effects, depending upon the peculiarity of the remote cause. Hence the efflorescence in *scarlatina*, the rash in *measles*, the pustules in *small pox*, and so forth; the effects being modified not only by the peculiarity of the remote cause, which, apparently through the blood, operates specially on certain structures, as shall afterwards be shown.

The indication in the *treatment* of the *congestive* form of fever, is to restore the animal heat, and to equalize the venous and arterial circulation; whereas in the simple form of fever, the indication is to lessen the heart's action and the animal heat. In the inflammatory form, the indication is to remove the inflammation, and this indication, like the preceding one, is generally best fulfilled by evacuants, judiciously varied according to the circumstances of each particular case.

Beddoes has said, figuratively, but emphatically, that general rules murder their exceptions; and certainly, however useful general rules may be to guide us, like navigators, through extensive tracks, yet we must remember that the modifying circumstances require a proper consideration, since they are the rocks and shoals on which men are apt to be wrecked. For example, I would instance the two disorders, *pleurisy* and *bronchitis*, both inflammatory ones seated within the same cavity; yet if the active treatment necessary to be persued in the first were always adopted in the second, the life of the patient would very often be sacrificed in bronchitis. The doctrine of a congestive, simple, and inflammatory variety of fever, is legitimately deducible from symptoms and dissections, and removes a crowd of false hypotheses, and also of technicalities framed in the ignorance of former times. This doctrine is especially applicable to infantile affections, notwithstanding the separate treatises which we possess, as if children did not belong either to the masculine or feminine, but were of the neuter gender. Its pathological and practical application will likewise be found very useful in that department of physic which is called surgery, and which was, unfortunately for the science, separated from physic in a dark age, by cunning, under the mask of religious superstition, and which still continues

separated by the powers held in corporate bodies, one of which we have lately seen enacting laws, in an exclusive spirit of monoply, which deprive men of their common rights, and give no adequate security to the public welfare; for the examinations are so very deficient as to exclude the practice of physic, an essential point in all surgical cases, since not the external pathology merely, but the internal pathology, requires a simultaneous consideration. Most surgical cases, as they are called, terminating fatally, where they do so, by the implication of some internal disorder or disease. The first step therefore in surgery is, and ought to be, a knowledge, an intimate knowledge, of the principles and practice of physic.

The *second class*, or *chronic* affection, arises in like manner from common and peculiar causes: the first having common, and the second, special properties, by which they are distinguished. The whole range of pathological inquiry might be divided into *three* great leading *conditions;* namely, *predisposition*, *disorder*, and *disease*. Predisposition consists in the liability or tendency to disorder or disease. Disorder is some error in the motions of the solids, or in the distribution or quality of the fluids. Disease essentially consists in something being taken away from, or superadded to the natural structure. Chronic disorders are generally insidious in their origin and progress, and, if not timely discovered, become diseases, by altering the structure of the parts in which they are seated. Chronic affections frequently, however, wind up in an acute form; and acute affections, on the other hand, sometimes become chronic; and thus the two forms may, and often do, pass and repass into each other. These changes should teach us to be very careful in distinguishing and treating maladies, and not to confine our views within the limits of any artificial arrangement.

The *remote occasions* of chronic affections are either *internal* or *external*.

The external are the ordinary agents of Nature, or those which have special properties, called peculiar. The internal are errors of diet and other ingesta. Besides the *internal* occasions involve the doctrine of *predisposition*, which may be said to be, 1. Here-

ditary; 2. Œtal, or connected with the age; 3. Sexual; 4. Acquired, from some previous disorder or disease having left some part weaker or more faulty than before.

The doctrine of *predisposition* is one of immense importance, in a preventive light, especially that of hereditary predisposition. To give a single example—where consumption exists in a family, we may succeed in preventing it by avoiding the exciting causes, in the institution of a good regimenial and mental management, occasionally aided by medicine.

From what has been said, it will appear, that there is a world within, and a world without us, the elements of which are continually operating upon us, so that life is a continued conflict. If we were to attempt to refer all the seemingly discrepant symptoms of chronic affections, and their pathological causes or conditions, we should find that the following were the most important and frequent: 1. *Venous Congestion;* 2. *Simple excitement;* 3. *Inflammation;* 4. *Changes in the qualities of blood;* 5. *Changes in the secretions of the blood;* 6. *Some mechanical interruption;* and hence, as in the acute and sub-acute affections, we would be necessarily led to the consideration of a few points, the removal of which, where practicable, would remove the attendant train of symptoms; for we must no longer pursue the nosological method of Cullen; we must no longer be deceived by names which, generally speaking, only involve a symptomatical pathology, and leave us in the dark respecting the structual states or conditions which are the true causes of those symptoms. In a word, we must regard symptoms only as the signs or indications of disorder or disease, and not as the disorder or disease itself, which is to be sought in some morbid change either in the solids or fluids of the body.

I now direct your attention to the plan of this course of Lectures. In the first place, I shall consider the remote occasions; in the second, the symptoms; in the third, the morbid anatomy; in the fourth, the pathological conditions on which the symptoms depend; in the fifth, the diagnosis; in the sixth, the treatment; and in the seventh, the prognosis in each Lecture. The principles will arise legitimately, as inferences out of facts alone. These

Lectures will contain the results of observation and experience, laboriously conducted through a period of upwards of twenty years, at the bed-side of sick individuals. Allow me to remark, that however important my duties as a teacher may be, yours, as students, are equally deep and responsible. Not only are the hopes of your relations and your own welfare involved in the consideration of your present conduct and acquirements, but the safety of the sick, and the happiness of their friends, since, humanly speaking, the issues of life and death are ultimately to be placed in your hands as medical practitioners. If other motives were wanting to awaken your attention and zeal, they are to be found in the great extent of the science, in its beneficent objects, and in its useful ends; for, uniting philosophy and philanthropy in itself, it affords a vast field for the exercise of all that adorns and dignifies our moral and intellectual nature. If you now lay the foundation of correct elementary knowledge, you will become highly useful members of society, provided your moral conduct be correspondent, while some of you, by discovering or extending important truths, may rank your names among those great benefactors of mankind who make times and countries worthy of our remembrance.

LECTURE I.

THE maladies to which the human body is liable, are divided into *two great classes:* the first, comprehending *acute and subacute* affections, the second, comprehending *chronic* affections.

Acute and subacute affections are those which commence quickly and terminate in a short time; whereas the chronic are those which commence slowly, and which have a protracted course. Each of these clases of affections arise from certain agents, which are technically termed *remote causes*, and these have been subdivided into *predisposing*, *exciting*, and *proximate*. The predisposing causes are such as produce the tendency or

liability to disorder or disease. The exciting causes are such as can produce either the one disease or the other, according as the person may be predisposed. The proximate cause, according to the language of the schools, is nothing more or less than the disease itself; when it is present, the disease is present; when it changes, the disease changes; and when it removes, the disease is removed. Now as this can only be the affection itself, I shall in these Lectures *not use* the term *proximate cause* at all, but in its stead I shall substitute *pathological condition*, to denote that state of parts on which the symptoms mainly depend.

The *remote causes* of the first class are *common* and *peculiar*. The peculiar causes are, 1st, malaria, or what is commonly termed marsh effluvia; 2d, other atmospheric infections; 3d, human contagion; and 4th, animal, vegetable, and mineral poisons. The common causes are distinguished from the peculiar, because they produce no specific effect, and are only the mere ordinary agents of nature. These are also devisible into four classes—depressants, stimulants, irritants, and interruptants. *Depressants* are such agents as diminish the heart's action, the animal heat, and the muscular power. *Stimulants* are those agents which increase the heart's action and the animal heat. *Irritants* are those which increase the sensibility, and produce a redness of a part. *Interruptants* are such as impede the flow of blood either through the arteries or through the veins, or through them both simultaneously. Now the affections of the first class, proceeding from the common remote causes, whether depressants, stimulants, irritants, or interruptants, I designate by the generic term, *common fever*.

If we examine minutely the particular varieties of common fever, we shall find that it will admit of a further division; that each of these particular effects may be referred to some more ultimate effect or principle; and that there are, 1. *Common congestive fever;* 2. *Common simple fever; and* 3. *Common inflammatory fever*. I use the term, common congestive fever, to denote its leading variety, as it proceeds from a common cause, and is attended by congestion in some particular part. I use the term common simple fever, to distinguish it from the congestive

and inflammatory varieties; and I use the term common inflammatory fever, to denote the cause by which it is produced, and the inflammation with which it is attended. And I shall appeal to facts, to morbid dissections, and to the operation of remedies to show, that all the common agents of nature produce either one or the other of these three forms of fever.

I shall first describe the nature of *common congestive fever*. Its remote causes are predisposing and exciting. The great predisposing cause of common congestive fever is debility, which is either general or local: when it is general, all the functions of the body are languidly performed, and this debility may be either hereditary or acquired. But it may also be local, and the individual may have the appearance of the florid vigour of health, and yet carry about with him some local defect: so that, when the exciting cause shall be applied, he will be incapable of resisting its action; and when the shock is received on the debilitated part, it yields to its influence, and an accumulation of blood in the part is the result. It is mentioned by Dr. CURRY, that those individuals are the strongest, who can resist the greatest variations of temperature, and that those persons possess more excitability of the nervous system, by which they are able to resist the influence of a low temperature. Infants, old persons, and recent convalescents, have very little power to resist low temperatures; but men may be made temporarily weak, by evacuation or by fasting, or by excess of exercise, by which they would become liable to congestive fever. All the *exciting* or remote causes of *common congestive fever* are *depressants*, which operate by diminishing the heart's action, the animal heat, and the muscular power. These are, 1. What is popularly called cold or low temperature; 2. Bodily shocks proceeding from accident or operation; 3. Mental depression; 4. Any thing which offends the stomach; 5. Exercise carried to exhaustion.

It is important, very important, to consider the predisposing and exciting causes of any affection; because, knowing them, we may, in a great many cases, prevent the occurrence of disorder or disease. This is the only department of physic which can be practically useful to the public; because the practice of physic

requires a great deal of elementary information, as a knowledge of anatomy, physiology, pathology, &c., and can therefore never be obtained by the public; but they are perfectly capable of appreciating the influence of predisposing and exciting causes, and by knowing them, they may prevent the occurrence of various disorders. And I think that much good might be done for the public, if a book were judiciously written on the subject of avoiding the causes which predispose to disease.

There are three objects which present themselves for the *prevention* of common congestive fevers. 1st. By maintaining the general strength, by a nutritious diet, by a proper proportion of sleep, and a tranquillity of mind. The 2d point in the prevention, is to give tone to the surface of the body, and by thus maintaining the general strength of the system, will support the strength of all its parts. This may be effected to a considerable extent by the frequent use of the tepid bath, commencing at 96° and gradually lowering it to 60°, and it will be very much improved if you add one *ounce of salt* to each *gallon of water;* by this practice you become enabled to withstand low temperatures, and thus frequently avoid the liability to disease. The 3d mode of prevention is to avoid the exciting causes, and this is of great importance to be attended to by debilitated individuals.

The attack of common congestive fever having once commenced, it is known by the appearance of certain *symptoms.* These follow in *generical* order, and the *particular* symptoms relate to the *modifications* of this fever. The *generical* symptoms may be arranged under five heads. 1st. The diminution of animal heat; the general range may be estimated at 96° instead of 98°, being a diminution of about 2°. 2d Sympton is a diminution or oppression of the heart's action; the pulse may be considered as the stroke of the heart on the column of the circulating fluid. The pulse, therefore, in the most perfect form of congestive fever is either diminished in force or oppressed, and in the milder form of the disease, it is generally more feeble than natural. The 3d symptom is a diminution of nervous and muscular power, and this is a very permanent symptom. 4th. There is a diminution of the general sensibility; or, in common lan-

guage, the patient feels starved, and there is less excitability than natural. However, there are cases in which this is not so decisive; there is also at the same time, disturbance of some internal organ; now, when the function of an organ is disturbed, that disturbance points out that the organ itself has undergone some disorder or disease.

The parts which suffer most in this form of fever, are the brain and spinal marrow; the heart and primitive vessels; the mucous membrane lining the bronchia and the substance of the lungs; the liver and its associated veins. That these are the parts which suffer in this variety of fever, I shall be able by-and-by to show you. Again, the *particular* symptoms are different, according to the structure and functions of the part in which the congestion may be seated. In one person, the brain may be the seat of congestion, in another the liver, and yet the disease is essentially the same. The external characters of the common congestive fever are modified by its seat.

In the *brain* the congestion is detected by the following symptoms:—*First,* by giddiness, confusion of intellect, heaviness approaching to sleepiness and sometimes complete stupor. In less severe cases, the patient complains of giddiness, and has some confusion in his head, and occasionally finds a difficulty in directing his steps with precision; or, in still slighter cases, he complains of weight or pain in his head, more frequently of giddiness or some confusion. In the most severe cases, there is loss of sight and stupor, so that you can with difficulty rouse the patient. *Secondly,* it is more distinctly denoted by an intoxicated and fatuous expression of the countenance. *Thirdly,* by a blanched conjunction, usually attended by a glassy appearance of the cornea and dimness of sight. *Fourthly,* by a staggering walk, or by a complete prostration of the muscular power; in more severe cases, he reels about as if intoxicated; and in still higher degrees of this affection, he falls down, and can only be borne along by some other persons; his head hangs down, his arms fall by his side, and his legs are dragged after him. It is denoted, in the *fifth place,* by the pulse being weakened or oppressed. Now it is to be recollected, that there is a very close connexion between the

brain and the respiratory function ; the common congestive fever may commence with the symptoms of congestion in the brain, and in its progress, the respiration may also become disturbed. This may happen through the medium of the eighth pair of nerves ; for it is known that when these nerves have been divided, the respiration has ceased.

When the *spinal cord* is the seat of congestion, it is generally known by the presence of convulsions of the upper or lower extremities, and the patient usually complains of a numbness, with pain and tingling of these parts. Now it often happens, that the brain is affected at the same time with the spinal cord, and then you cannot get any account of the patient's symptoms, and you generally find him under convulsions.

When the *heart* is the seat of the congestion and its associated veins, it is denoted by the three following symptoms ; *first*, a load and a sensation of great weight in the region of the heart ; *secondly*, by an irregular or intermittent pulse. What I mean by an irregular pulse is, that it is sometimes quick, sometimes slow ; now hard, and then again soft ; but an intermittent pulse is that in which there is an absolute space between two of its beats, corresponding to the temporary cessation of the action of the heart. The *third* symptom is, the want of power to breathe ; the patient does not experience the distress in respiration, but an inability to do so ; and if you examine the pulsation in the neighbourhood of the heart, you will find it stronger than it is in proportion at the radial artery ; it is because the heart is overloaded with blood, and cannot send it with sufficient force into the extreme vessels.

When the *bronchial membrane* aud the *lungs* are the seat of the congestion, it is denoted by a difficult or weak respiration ; the patient inspires and expires with a more particular effort than before, and he takes in and gives out from the lungs a less quantity of air than in natural breathing. *Secondly*, it is denoted by a cough ; this, however, is sometimes present, sometimes absent. When the patient has a long resounding cough, it is less dangerous than if he had a short weak cough ; and in the most severe cases, there is no cough present. The congestion in this

part is denoted, in the *third* place, by a change in the colour of the lip and cheek; the lip is of a pale violet, or leaden colour; if the patient's countenance was pale when in a state of health, then the lip will have a leaden paleness, and this arises from the circulation of the dark blood in the minute vessels: but if the patient, in health, had a red cheek, then the lip will be of a plum colour. Frequently, also, the patient has a sense of uneasiness in the chest, the countenance is anxious, and the alæ nasi are almost in perpetual motion. I have instanced that the brain exercises a peculiar influence on the respiration through the medium of the eighth pair of nerves; but, on the other hand, a congested state of the bronchial membrane and of the lungs will exert a peculiar *effect* on the *brain*, and they may do this *mechanically* and *chemically*. When the lungs are congested, the heart cannot send the blood which is returned to it through them, and there is therefore an accumulation in the right side of the heart, and in the superior as well as in the inferior cava; this prevents the descent of blood from the brain, and in this way the congestion is produced mechanically. There is another mode in which it may influence the brain, and this is chemically; if the blood do not undergo the proper change in the lungs, it is returned imperfectly decarbonized, or oxygenated, to the left side of the heart, and sent to the brain in this state, it acts as a complete narcotic; and in this case the patient becomes remarkably torpid.

When the congestion is in the *liver and its associated veins*, it is shown by nausea, retching, or vomiting, and the ejected matter is sometimes mucous, sometimes bilious, at other times of a mixed description. It is shown also by *distention* of the *epigastrium;* by the sensation of great fulness and tension; *fourthly*, by diarrhœa or constipation; when attended with diarrhœa, the stools are like rice-water, sometimes mixed with blood; when constipated, the stools are found almost without bile, clay-coloured, and particularly fetid. It is denoted, *fifthly*, by anxious breathing. The respiration is irregular, short and anxious, but not difficult.

Now, in all these forms of common congestive fever the tongue

is generally moist, and covered with a ropy mucus. It usually happens that one part is the principal seat of disease, but on some occasions, all the parts suffer from the congestion. I once recollect seeing a gentleman, in whom the brain, the lungs, and the bronchial membrane, the heart and large vessels, and the liver, were all the seats of disease, all these important organs were implicated; he had the nausea and vomiting of fluids mixed with bile, showing that the liver was affected by congestion; he had the livid hue on the cheek and lip, showing that the bronchial membrane and lungs were affected; and he had the intoxicated expression of the countenance, with the blanched conjunctiva and glossy cornea.

I have thus far presumed the existence of common congestive fever, and I shall now attempt to show you that it does exist. I shall do this by referring to facts, and to the pathological condition of the parts, as shown by morbid anatomy. In cases of examination after death, we find the most distinct marks of existence of this state of common congestive fever. If the congestion has been in the heart, we find that organ, and the two cavæ, gorged with blood; if in the bronchial lining membrane, we find it loaded with dark coloured blood; and if in the lungs, we find them crammed with carbonized blood, and frequently with effusion into the cavity of the pleura; when the congestion is in the brain, we find the vessels of the pia mater loaded with blood, and sometimes there is effusion into the ventricles, or between the membranes of the brain. When the liver has suffered congestion, we find that it is excessively gorged with blood, and that when it is cut across the blood spouts out of it; it is even sometimes ruptured by handling, and the veins of the mesentery present the appearance of a venous tree. It is true, that in cases where effusion has taken place, the marks of congestion, as happens also in inflammation, are less decisive; we may find in an intense inflammation of the pleura, coagulable lymph effused, which would at once decide us as to the nature of the disease; and so in congestion we find that effusion sometimes takes place, which will relieve in some degree the turgescence of the vessels.

Now these are the marks or the symptoms, and the morbid

appearances; and I shall next speak of the pathological conditions of the parts. Recollect, that the main objection which I make to existing nosological arrangements is, that the symptoms are substituted for the diseases themselves. Symptoms are not the things signified, they are only the signs, by which peculiar conditions of the body are pointed out.

All the remote causes of common congestive fever, then, are depressants; agents which operate by diminishing the heart's action and muscular power, operating first on the blood or on the nervous system; and whether they operate in the one way or in the other, their ultimate effects are the same. These effects are the *abstraction of the animal heat* from the surface of the body; the blood retires from the superficial veins into those more deeply seated; then we have a change in the animal heat; there is a *change in the external and internal states of the veins*, there is a deficiency of blood on the surface: there is a surplus of it in the interior. The whole system has received a shock, and the *heart suffers from it;* it has not power to throw off the blood which is accumulated in it to the remote parts of the system; and the consequence is, an impediment to the whole of the venous circulation, whether in the ascending or in the descending cava; and all the organs we have before named become subsequently congested. Another change takes place, the *respiration* is *affected*, it is either weakend or oppressed. The muscular power becomes weakened, or the difficulty of respiration is produced by the congestion of the lining membrane or of the lungs themselves; and the blood does not undergo that change which is essential for the purposes of life. Another change which takes place, is in the *distribution of the blood* in the vessels; there is not enough blood in the arteries, but too much in the veins; and this is proved by dissections. The *sixth change* which takes place is, that the muscular and nervous power is diminished; and these changes depend equally on the circulation of blood not duly arterialized. When the change in the quality of the blood does not take place, the nervous and muscular powers fail. The observance of this fact, induced GALEN to say, that the nervous power is a subtle fluid, elaborated from the blood, by its coming

in contact with the nervous matter in the lungs. *Seventhly*, there is a change in the constitution of the blood itself; and all those states, are found either singly or mixed up in the common congestive fever.

There are several means which nature takes to prevent the occurrence of the common congestive fever. The *first* is, the power we possess of preserving the same degree of heat under a low or variable condition of temperature. You are aware that the animal body retains nearly the same temperature under various circumstances, and which prevents cold having that influence which it otherwise would. The *second* mode of prevention is in the elasticity of the vessels; the veins and the arteries admit of a certain distension, before they come into the state of congestion. The *third* is that of the free anastomosis of the vessels. If we look at a frog's foot through a microscope, we have ample proof furnished us, that if an obstruction takes place to the passage of a globule of blood through one vessel, it immediately passes on by another. *Fourthly*, increased secretion is another mode by which the effects of congestion are prevented. I might instance the increase of secretion from the kidneys, when cold is applied to the surface; for in winter, individuals pass a larger quantity of urine than in summer. The kidneys seem to act the part of a pump. In particular cases of congestion of the liver, it is sometimes carried off by a copious diarrhœa. These are the four principal means which nature adopts, and by which attacks of common congestive fever are prevented.

Now, when this manner of removing a threatened or existing congestion fails, then we have what is called reaction or excitement taking place. When the skin becomes cold, and the pulse becomes feeble; when the strength becomes diminished, and the function of some internal organ becomes disturbed, then it frequently happens, that the heart, by an innate law, operates on the blood which has been thrown on its right side, and a change is produced in its distribution; it becomes almost equally diffused between the arteries and the veins. This is called reactive *excitement*, which is made up of an increase of the heart's action, and an increase of the animal heat.

But when the skin continues cold, the pulse feeble, the strength prostrate, the functions of the brain, heart, liver, or lungs disturbed, all these prevent a decided reaction, and the most perfect form of common congestive fever exists. This reaction has been called an effort of nature; and our object, in fact, in the treatment of this form of fever, is to assist nature in producing reaction; if we were to attend to the efforts of nature, we should frequently have many valuable hints for the treatment of disease. The *treatment*, therefore, of common congestive fever is, to restore the equilibrium which naturally exists between the arterial and the venous systems.

LECTURE II.

In my last Lecture, I described the remote causes, the symptoms, the morbid appearances, and the pathological conditions of the *Common Congestive Fever;* and in this Lecture I shall pass on to the *treatment.*

The natural mode of removing common congestive fever, is, by what is commonly called re-action, the hot stage, or the stage of excitement, which state is shown by an increase of the heart's action, and by an increase of the animal heat, by which the blood is thrown from the central parts of the body to the surface, and by which the balance between the arterial and venous systems is restored.

Now, when the hot stage, or the state of re-action is not perfectly established, when the fever assumes a masked, or oppressed form, there is more danger than when the heat of the surface is greater, or the pulse quicker than natural. But when the natural efforts are inadequate to excite re-action, we attempt to produce it by artificial means, namely, by restoring the balance between the arterial and the venous systems. There is no efficacy in physic excepting that which is to be found in its precise applica-

tion; and therefore, when we prescribe a remedy, we must have a definite pathological object in view, and endeavour to fit the means to the end. Now this is only to be done by the observance of symptoms during life, and by an accurate examination of the cases after death; and the means of prescribing with precision are only to be obtained by carefully noticing the effects of remedies. It is a mere error to prescribe for some abstract name; but we should always regard the absolute pathological conditions of the parts, and recollect also, that there may be various modifications of the same affection.

In the state of common congestive fever, there are various conditions which require a very different treatment; and whatever our views may be, we can never be successful in our treatment unless we take into account the minute changes which modify the effects of remedies. Now there are three forms of common congestive fever, and unless you discriminate these at the bed-side of the sick, you will never be successful in your management. There is an *extreme* form, an *intermediate*, and a *mild* form of this fever, and I shall now begin with a description of the *extreme form:* this is distinguished, 1st, by an universal coldness of surface; 2d, by a weak or small pulse; 3d, by a feeble or disordered respiration; 4th, by a great disturbance in the function of that organ which may happen to be the seat of the congestion; and 5th, by a great prostration of the muscular power. And in the *removal* of this extreme *form*, we find that there are two distinct indications pointed out; the *first* is to act on the *skin*, and in the *second* we have to act on the *stomach*, in order that we may restore the balance of the circulation, the equilibrium of which has been disturbed. There are other subordinate measures to be employed, but those which I have just named are the leading ones.

In the *treatment* of this affection, it is necessary that a man should have the means which he intends to employ so distinctly arranged in his mind, that he may combine them in all urgent cases without loss of time. In the treatment of the extreme form of common congestive fever, and the observation I am now about to make applies to each of the other forms, there are *three* points to be considered; these are the *medical*, *regimenial*, and *mental*

management of the patient. By the *first* term, I mean the employment of medical agents, properly so called; by the *second* term, I mean the arrangement of diet and temperature; and by the *third*, is understood the proper management of the mind of the patient, of the attendants, of the friends, and of the practitioner himself.

With regard to the *medical treatment*, the most efficacious method is the application of the *hot air bath*, and I will show you how this is to be used at the end of the Lecture. The minute I heard an account of the hot air bath, it struck me as being the very thing which was wanted in the treatment of the congestive form of fever; for the exhaustion of the muscular and nervous power in the extreme form of this affection is sometimes so great, that the fatigue produced by merely removing the patient into the warm bath would be sufficient to destroy him. Next to the air, I should rank in efficacy the vapour bath, and then the sand bath, which might be used by putting heated sand into small bags, and applying them to the stomach, feet, and other parts. The whole surface is chilly, the blood has returned from the surface, and has been accumulated in some internal organ, where it undergoes almost a complete stagnation, or at least produces a complete interruption of the venous circulation, a derangement of the function of that part is the result, and, if that part be important, of the functions of the whole body. The use of the hot air bath is to rouse the energies of the system; and in some of these cases, the patient is raised, as if by the touch of a magic wand, from weakness to strength, by its application.

The *second* medical means is the employment of some *diffusible stimulus*, as brandy, opium, ammonia, wine, or ether. It is of course necessary to be acquainted with the quantity proper to be given of each of these. As to *brandy*, for example, when the skin is cold, and the pulse feeble, it should be given in tea-spoonfuls every three or four minutes, until re-action is produced: if you were to give too much, the effects which it would have, instead of rousing the patient, would be that of acting like an electric shock, and would entirely suspend the action of the heart. Opium I shall mention hereafter. If you employ *ammonia*, you should

give *five grains* of the subcarbonate every hour or two, until the freedom of the heart's action be restored. This should be enveloped in some mucilaginous fluid, as it is the best medium for exhibiting it. *Ether* should be given, in doses of half a drachm, for the same purpose, every hour or two; but I think a mixture of brandy and opium is the best. Recollect, however, that these diffusible stimuli are only to be employed whilst the person is labouring under the first shock, and when the congestion is so extreme as to threaten the speedy destruction of the patient, and when the re-action is once established, the diffusible stimulants must be withdrawn.

The *third* medical agent might be the employment of some *hot stimulant fluid*, some hot aromatic infusion, as ginger tea; or even the infusion of common black or green tea will answer very well; but take care, in the exhibition of liquids, not to distend the stomach too much, as such a state of the stomach would exert a peculiar action on the heart, and impede rather than accelerate the appearance of re-action.

The *fourth* medical means should be the administration of a warm injection, and nothing answers better for this purpose than a strong infusion of ginger tea. And if the colon should be loaded with scybalæ, it would tend very much to effect their removal, which would prove extremely beneficial.

The *fifth* is the application of bottles or bladders filled with warm water, or sinapisms, to the stomach, or to the soles of the feet, or to both places at once. Now all these various methods are used for the accomplishment of one object, which is that of restoring the heat to the surface of the body.

With respect to the *regimenial* management, the following are the chief points. The *first* is, the *regulation of the surrounding temperature;* and in all these cases, in which the skin is cooler than natural, it is of great importance to attend to the surrounding temperature, not only of that about the bed, by the accumulation of covering, but also of the apartment in which the patient lies. The blankets, between which the patient is to be placed, should not be old, nor have been long used, as they then become good conductors of caloric. The patient should be well covered with

bed-clothes, but before he is put into bed it should be warmed, and the temperature of the room should never be below 66^0; if the heat should begin to be established, do not let the patient get up too early, as he would soon become again chilled. The *second* point to be attended to, is the *ventilation* of the apartment. Air is at all times the immediate food of life, and in all cases where the respiration is so weak that the patient can take in little air at a time, or when the bronchial membrane is affected, he will require a great deal of fresh air; and the best mode of sustaining the strength, is to allow of the admission of fresh air, and to keep the patient covered with warm clothing at the same time. The *third* point of this division is, to furnish a *light support* in the progress of this affection, as light chicken broth, or weak beef tea; but at the same time take care not to distend the stomach. Patients will sometimes have nausea produced by the nurses or the attendants giving broth or tea every quarter of an hour, and the load of fluid thus accumulated in the stomach serves only to increase the general depression; and if you arrive when such is the case, do not continue to give more, but wait until the nausea is removed. *Fourth*, you should attempt the *preservation of the strength* of the patient, by keeping him quiet and avoiding all noise in his apartment. The patient is often worried and fatigued by persons frequently talking to him, by carrying lights to and fro in the apartment, and by always being anxious to do something or other for him. In all cases, but more particularly where the brain is the part affected, the patient is extremely susceptible of all these impressions, and therefore it becomes the duty of the practitioner to remove them.

The *mental management* is a point of great importance to attend to. It happens, in the extreme form of common congestive fever, that the brain, the bronchial lining, lungs, and the liver, are sometimes simultaneously affected. But when the brain is the seat of an extreme congestion, the patient is extremely insensible of external objects, and, therefore, the management of mind, as far as regards him, is not of great importance; but in the other less severe forms of this fever, you should recollect that although

the patient has not the power of speaking, yet he is sometimes capable of knowing what is going on. But when the functions of the brain are not disturbed, and the congestion is seated in the other organs I have just named, the mind is, in this case, clear and unclouded, and we must be very careful of what we say, and of what we do; even the expression of the countenance will be watched, and even a significant shake of the head would have a very unfavourable effect on the patient. So, on the other hand, the administration of hope is attended with a very opposite result; the *confident administration of hope* therefore should be afforded. For it frequently happens, that, when he is sensible of labouring under the shock of some important disease, he looks to the relation in which he stands to his family, to his relatives, and friends, and the anxiety thus produced would add materially to his disorder; but inspiring him with a well-judged confidence as to the successful termination of his complaint, would avoid this consequence. The human mind is so constituted that you cannot point out the danger to the patient which may really exist; for who is there could bear unmoved the announcement that he laboured under some mortal disease? However great that man's philosophy might be, yet he could not be insensible to such a communication; therefore the *medical man* should be very careful of his *looks*, and of his *words*, and of his general *manner*. He should be careful also to regulate the manner of the friends, of the nurses; for if there be a great anxiety depicted in their countenances, the patient reads it readily, and therefore the medical attendant should take care that the friends do not interfere or do too much. Tranquillity of mind, and rest of body, are very necessary to be observed in the management of the patient. It may often happen that, on your arrival at the bed of the sick, some kind office may be required, and that immediately. In the practice of physic, the end sanctifies the means, and therefore you should never be above doing any thing that could minister to the comfort or safety of your patient.

The medical man should be *punctual* to his *promises;* if he promise to call at a certain hour, and does not, he produces much

anxiety both in the mind of the patient and of his friends; he should, therefore, in all cases, hold his word inviolable. Lastly, before leaving the patient, he should say something kind to him, and rather consolatory as to the state of his disease. I shall now relate to you a few cases showing the efficacy of the hot-air bath.

I was sent for to a gentleman labouring under the extreme form of congestive fever, and in whom all the important organs appeared to be labouring under congestion; he had confusion of intellect, a blanched conjunctiva, a feeble, oppressed pulse, a livid hue of the lip and cheek, a weak respiration, nausea and vomiting, the surface at the same time as cold as clay, and entire prostration of the muscular power. I laid him between warmed blankets, gave him warm brandy and water, and applied bottles filled with hot water to his stomach and feet, yet the symptoms became worse, the skin became colder, and the respiration more feeble, and he was evidently sinking; in this state he was when the hot-air bath was applied; it was continued nearly half an hour, and by that time the heat was restored on all the surface of the body, he burst out into a profuse perspiration, and the heart's action was excited and restored fully; he required afterwards only a few doses of calomel, and his recovery was extremely rapid.

Another case which I shall mention to you, is that of a man who laboured under congestion of the liver and lungs. Dr. JACKSON saw him, who, as well as myself, thought he must soon die. The hot-air bath, however, was applied, and removed, with the same degree of success as in the former cases, the congestion. Small doses of calomel and opium have an extremely beneficial effect in these cases, when the re-action commences. The tongue, however, must be moist, if you expect any benefit from the opium; when otherwise, I never knew any good obtained from it. Respecting *calomel* I have been induced, from an observation of facts, to alter my opinion as to the extent of its administration. Small and repeated doses of calomel and opium are the best. *One* or *two grains* of *calomel* with *half* a *grain* of *opium* should be given every two, three, or four hours; but I should be very careful about continuing the opium after decided re-action

has commenced. It sometimes happens that it is necessary to give large doses of opium in the first instance. In the North of England, for example, people frequently die under the shock of a *burn*, without the least re-action having taken place; and yet 50, 60, or 100 drops of tincture of opium given immediately will bring about re-action. In the cold fit of an ague the patient labours under an extreme form of congestive fever; the surface is cold, the pulse weak, and in weak convalescents this state is often produced from much exposure to cold; we may then generally shun the cold stage of the ague by giving a large dose of opium.

I knew a gentleman who was thrown into a state of congestion by keeping himself in the water for too long a time: it was with great difficulty he reached the shore, and when he did so, he fell prostrate on the ground, like a man dead. The speedy use of the warm bath however brought back the blood to the surface of the body, and he recovered. When a *general torpidity* is produced, a *gradual application* of *warmth* would be most beneficial, as rubbing the patient with snow; and if you were to plunge a patient into the warm bath, you would, in all probability, destroy him. This knowledge of the treatment of congestion is equally useful to the surgeon as to the physician; for after accidents or operations, the efforts of nature are not enough to bring about re-action, and the treatment I have spoken of must be adopted. Another state in which opium is a very useful remedy, it is in the collapse after excitement; for example: the patient has a firm and quick pulse, and yet the surface becomes suddenly cold; and in those cases particularly, which are accompanied by vomiting and purging, opium frequently saves life.

The *second form* of common congestive fever is the *intermediate*.

In this form of fever the *heat* is generally lower than natural; the patient feels cold about the extremities, but retains nearly the usual warmth about the trunk. 2. The pulse is not so weak as in the extreme form, but generally feels as if the heart were struggling to send the blood through the vessels. 3. The respiration is by no means weak, the person takes in and gives out more air than in the first form, and he can generally cough

freely, showing that the congestion of the bronchial lining, or of the lung, is not severe. 4. There is less local disturbance. 5. There is less prostration of the muscular power. Very great care is necessary in the extreme forms of this fever, as to the manner in which you take away blood. Yet even in that form the abstraction of blood is sometimes beneficial; but I have found that since I have been more cautious in this respect, that I have been more successful; especially since the application of the hot-air bath. In the intermediate form, bleeding is often a very useful remedy. I recollect seeing a boy whose conjunctiva was blanched, whose pulse was weak and oppressed; who was confused in his head, and could give, therefore, no correct account of his feelings; whose temperature of surface was lower than natural. I ordered one ounce of blood to be abstracted and the hot-air bath to be applied; and in a few days afterwards, the attack ran its course in a common simple fever, and he perfectly recovered. The quantity of blood necessary to be abstracted, to produce the effect, is sometimes however very great; and young practitioners imagine that nothing can be done unless large quantities of blood be drawn. Two or three ounces will frequently, in cases of this kind, be sufficient; and you must in all cases look to the effect it produces, and not to the quantity of blood which you take away. A woman was brought into the Fever Hospital, labouring under strong convulsions; there was evident congestion of the spinal cord; she had the other symptoms which I have before enumerated, the vessels were almost ready to burst from the shock; her cheeks and lips were also livid. I ordered a vein to be opened in each arm, and forty ounces of blood were drawn before she felt relieved; the other remedies were then used, and she recovered.

I was called to a gentleman who had an attack of congestive fever; at first it was of an intermediate form; he had felt his head light, his skin had been chilly; he continued to go about with these symptoms increasing, and at last he fell down in a state of extreme congestion. I immediately ordered the temporal artery to be opened, and the blood was allowed to flow until he felt relieved, and about thirty ounces were lost. In such cases,

whether you open an artery or a vein, the blood comes away like tar; the blood is imperfectly decarbonized; it then comes out of the vessel in jets, and afterwards trickles; and if you keep your finger on the pulse, you will find that the heart's action is gradually increasing. The circumstance of the blood oozing out at first like liquid tar, then coming by drops, then in small jets, and afterwards in a stream, appears to show, that it is owing to the stroke of the heart's action extending from the arterial to the venous side of the circulation.

In this state of congestive fever you will never find the blood drawn exhibit the buffy coat; and if while the blood is flowing, you find the pulse does not rise, do not carry it further, but immediately stop short; for if you were to continue the bleeding, the patient would sink under it. The congestion by this mode is sometimes removed, and you have a simple inflammatory fever to treat. But, on the other hand, when the re-action does but imperfectly remove the effects of congestion, the muscular power is so much exhausted, that if he be allowed to get merely to the close-stool, the exertion produces a state of syncope, almost like death; and you will have great difficulty in removing it, and he may even die at last. In the treatment of these cases, then, we restore the strength of the patient by a series of gradual remedies, and we nurse it therefore by a state of repose. What we call nature, appears to me, in the human body, to be nothing but certain habits of action established by the Deity, with a peculiar tendency to return to these habits when the disease which had caused an interruption of them is removed.

Now there are some cases of this kind in which it is better to avoid bleeding altogether. I recollect the case of a young lady who laboured under an attack of the intermediate form of fever. The brain, heart, and lungs, were the seats of congestion, her pulse was feeble, and the surface of the body chilly, and she had slight convulsions. I put her into a warm bed, used warm applications to her stomach, and sinapisms to her feet, and gave her some brandy and water. She recovered, but it was some time before her nervous and muscular powers were restored; and I believe that some light effusion had taken place between the membranes

of the brain, or in the ventricles. Of the different stimulants intended to act on the stomach, and by it on the nervous and vascular systems, I consider a combination of brandy and opium to be the best, and afterwards calomel should be given. In cases where young children have been allowed to cram their stomachs with cold indigestible food, either by the negligence or ignorance of their attendants, you will find them lying in the nurse's lap, with a pallid countenance, a cold skin, the breathing oppressed, and sometimes stertorous, and the whole system, in fact, completely torpid; you will, in such cases, find unspeakable benefit in the administration of small and repeated doses of brandy and opium. You will find it act as a charm, and the little sufferer will be rescued from the jaws of destruction, and the hearts's action will be established, and the animal heat restored.

The *third form* of common congestive fever is the *mild*.

This is marked by a great degree of langour, lassitude, and paleness; the patient complains of being chilly, and has some uneasiness in his head. He has also a weak pulse and a slight degree of exertion fatigues him. Now, whenever you see a patient under these symptoms, never allow him to persevere in going about; if you do, the result will be such as I detailed to you in a case at the earlier part of the Lecture. You must never compromise your duty, by acceding to patients' wishes, but insist on their remaining at home a few days. By a mild regimen it will pass on to a simple inflammatory affection, and be removed by simple measures; such as observing *rest*, by remaining in a *warm bed*, by taking bland *tepid drinks*, and by the use of the *tepid bath*, which may be employed about the temperature of 98° or 100°: or, if the skin should then remain below the natural standard, it might be raised to 102° or 104°. Where the skin is universally cold, nothing tends so much to restore the balance between the arterial and venous systems, as the tepid bath. The *second measure* to be adopted for the removal of this form of common congestive fever, is the exhibition of a *gentle emetic*, which proves extremely beneficial, and tends in a remarkable manner to equalize the circulation. I think that since the introduction of purgative medicines we have too much neglected the use of emetics.

After the removal of all the three states of common congestive fever, symptoms of common simple, or common inflammatory fever supervene.

PROGNOSIS.

This is a subject of great importance, and in the manner in which you may give it requires extreme caution, because it involves the judgment of the medical man. I have never known that man successful in his practice who was careless in the way in which he gave his prognosis. Do not confound the different forms of fever which we have this evening considered, but examine distinctly the symptoms and draw the line of discrimination. I shall first allude to the prognosis in the *extreme form*. The heat of the surface may be depressed, yet the pulse may be regular, and the function of no important organ disturbed; your prognosis would of course be, in this case, of a very favourable kind. But where imperfect re-action takes place, where the function of an organ remains disturbed, be careful about your prognosis, as the state of internal inflammation generally exists, and it will generally be found, in the bronchial membrane. In the *intermediate form*, the prognosis will be much more favourable. You may find that the re-action will not be perfectly produced, but that you may have the chilled surface and feeble pulse, and this state would constitute what I should call the congesto-inflammatory state. In the *mild* form of common congestive fever your prognosis is much more favourable than in either of the others. But still you should recollect that if you allow the patient to go about during this state, an extreme form may be produced by exposure to a low temperature, and he may fall down and suddenly expire.

The brain, lungs, and heart, have been called the tripod of life, and where they are simultaneously oppressed, be very careful how you give your prognosis, as such a state is generally attended with danger. Common congestive fever is very dangerous in infants, old persons, and recent convalescents; also in females soon after delivery. In fact, you may, in a general way, be guided in giving your prognosis, by minutely attending to the degree of local disturbance, and by the degree of general prostration.

Prognosis, generally speaking, is of great importance, and there are *three* points connected with it.

1st. You should take a deep interest in the state and welfare of the patient. When a patient sends for a medical man, he not only places his life in the hands of that man, but also the happiness of the family with which he may stand in immediate connexion, and of which perhaps he may be the head. And therefore it is your bounden duty to take a very great interest in his affairs, professionally considered. You should also make your first visit a long one, and investigate every symptom and every feeling, until you make yourself perfectly satisfied of his disease.

The 2d point which I shall name in connexion with prognosis, is the manifestation of attention and tenderness of feeling, not only to the patient but to his friends. Their feelings are mixed up with the welfare of the patient, and therefore you never ought to be inattentive to them or to their feelings. Medical men make much less profession of philanthropy than others; but they practise it a great deal more; they are, in fact, the good Samaritans to suffering nature.

The 3d point is the observance of caution, in the expressions not only of the attendants and friends, in the hearing of the sick, but also as to your own expressions. Reason over the case until you understand it, as it is impossible that you can give your opinion with propriety until you understand the disease; and, as it happens in physics that under similar circumstances similar effects take place, so in medicine, if you carefully notice the symptoms in connexion with the effects of remedies, you will acquire the power of arriving at a distinct knowledge of the pathological condition of a part, and on that knowledge you may found an accurate prognosis. The confidence of the patient, is placed on what you say, and therefore if you should unguardedly commit an error, the effects of it in this case might be irretrievable.

On the one hand, then, you must not be too sanguine, and on the other hand you must not be too diffident. If a man be too sanguine, he loses the patient's confidence, by some disappointment occurring to his predicted event. If he be too diffident,

he never acquires the confidence of the patient. You should moreover be honest, particularly honest in the expression of your opinions; if they cannot be given favourably, they should not be communicated to the patient, but to his friends. Some men of secondary powers strive to raise their reputations by exciting a species of terror in the minds of their patients, by giving them all to understand that they are in circumstances of great danger, in order that they may have the greater credit of curing them. This, however, should be avoided by a man of honesty; he will fairly state the case, and then apply himself to the mode of removing it.

DESCRIPTION OF THE HOT AIR BATH.

The machinery employed for the purpose of applying hot air to the surface of the body, is very simple. It consists of a frame of basket-work, of an arched shape and about six feet in length, open at one end, and at the other is a piece of wood, with a hole in the centre. This frame is laid over the patient when in bed, and over it is placed a blanket or two, and these are tucked under the patients's chin. A tin tube is then passed into the hole at the bottom of the frame, and in the lower part of this tube, a little spirit lamp is placed lighted, and the apparatus is complete. The air, heated by the lamp, passes up the tube, and is brought in contact with the surface of the body of the patient.

LECTURE III.

COMMON congestive fever may be considered as an exception to the usual law of the animal economy; for it generally happens, when depressants are applied to the animal body, that re-action, or the stage of excitement succeeds, or, in other words, there is an increase of the heart's action, and an increase of the animal heat. But on some occasions the stage of the excitement does not supervene: the cold one continuing, and interrupting

the regular series of febrile phenomena, constitutes what I denominate the true congestive fever.

CULLEN has committed a very serious mistake in supposing that fever, commonly so called, is always attended by the cold stage, or the stage of congestion, and he has committed another mistake, namely, by asserting that the cold stage is always followed by the stage of re-action, or excitement. He has assumed that shivering always attends the commencement of fever, but I shall show you that fever frequently has no cold stage at all. If you understood me distinctly, you must have perceived that common congestive fever may, 1st, be solved entirely by the means used; 2ndly, it may, through these means, pass into the stage of re-action, or excitement; and 3rdly, that stage may occur through the natural efforts alone. Suppose the stage of re-action has taken place, that the heart's action and the animal heat are established, then you will find the fever either simple or inflammatory. The word fever in all languages signifies heat, if we were, with the public, to consider that fever essentially consisted of a simultaneous increase, both of the heart's action, and of the animal heat, then we should entirely exclude the congestive form of fever, which arises from depressing agents, and which sometimes continues as a distinct variety without re-action. Therefore this definition is defective, inasmuch as it excludes the congestive variety of fever. Supposing, however, for the sake of argument, fever essentially to consist of an increase of the heart's action, and an increase of the animal heat, the question is, how does this state arise? In some medical, and especially in some surgical books, the most absurd notions have been raised as to the manner in which fever arises; but in these Lectures I hope you will understand, when fever exists in the relation of a cause, and when of an effect, to inflammation.

Fever is produced in three modes, it arises, *first*, from *depression*; *secondly*, from *stimulation*; and *thirdly*, from *irritation*.

It arises from *depression*, which is that state of the system produced by the agency of depressants, such as diminish the heart's action, the animal heat and the muscular power. When an individual plunges into a cold bath suddenly, he produces a

state of congestion, in which the blood accumulates about the heart and lungs; what follows in this case? The blood, accumulating about the heart, excites it to re-action, and is thrown, with considerable force, from the centre to the surface of the body, and the heat of the skin becomes temporarily a little higher than natural, or, in common language, a glow occurs. Now, what happens in this case slightly, takes place more distinctly in ordinary cases of fever, arising from depressants. Congestion being continued a certain time, is followed by a hot stage, and which hot stage is in proportion to the force with which the heart recovers its power.

When fever is produced by *depressants*, it has three stages, viz. 1. a stage of *depression*, in which the heart's action, and the animal heat are diminished; 2, a stage of *excitement*, in which the heart's action and the animal heat are increased; and 3, a stage of *collapse*, in which the animal heat on the surface again declines, and the heart's action returns to the natural standard. We have a remarkable example of the existence of these three stages in the common ague, but it arises from a depressant of a *peculiar* kind, as I shall afterwards show you, wishing now to confine your attention to the *common* depressing agents. There is the cold stage of ague, or what I call the stage of depression; there is the hot stage, or stage of excitement; and there is the sweating stage, or the stage of relaxation or collapse. What takes place here from a *peculiar* cause, takes place in other cases from *common* causes. Therefore, whenever fever arises from depressants, it is attended by three stages I have named to you, with the exception of such cases in which the system continues under the full influence of congestion.

Fever arises also from *stimulation*. It is produced by the direct application of stimulants, without any cold stage at all. It commences by the hot stage, and terminates by collapse. You will recollect that I am speaking of common fever, arising from the action of the ordinary agents of nature on the animal body, and which do not exert any *specific* influence. The *three* following are the *principal* common *stimulants; high temperature*, great *bodily exertion*, and strong *mental emotion*, such as anger.

Nothing is more common than to observe a fever which arises at once through the influence of stimulants. As a proof that high temperature is capable of producing fever, I shall adduce the following fact. Half a ship's crew, who are unaccustomed to a hot climate, as Europeans, arriving in the West Indies, are seized with a fever immediately, commencing with the hot stage. We need not go so far as the West Indies to see examples of this form of fever: in the summer of our own country, when the temperature is high, and men exposed to it are obliged to make great exertions, we find in them that fever is frequently induced, commencing by a hot stage. I attended a comedian of great popularity, who was in the habit of exerting himself very considerably; sometimes the exertion was violent and long continued, (for he played at two theatres on the same evening;) and he often had attacks of fever, commencing directly with the hot stage. The same may be produced by long running or walking. When we do so, we exercise the muscles very powerfully: these press upon the veins, and the blood is forced with greater celerity toward the right side of the heart, and the heart exerts itself to get rid of the increased accumulation of blood. It is in this way that the pulse becomes more frequent, and the respiration hurried. Now, this condition occasionally passes on to the stage of common simple fever, and the patient remains feverish for a few days. In most of these cases, you see that the stimulus is universal. When it arises from a strong mental emotion, or high temperature, there is a change first produced in the nervous system, and the heart's action is influenced by it; it is increased if the agent be a stimulant; and it is depressed, if the agent be a depressant. In many individuals, who are weak, and who have highly sensitive nervous systems, fever arises in this way from the influence of a stimulant, without the accession of a cold stage. It has, in fact, only two stages: the stage of excitement, made up of a quicker pulse than natural, with a heat of skin greater than natural, and the stage of collapse, in which the pulse becomes again slower, and the animal heat lower on the surface.

It is a general law of the animal economy, that when it is un-

usually stimulated, the strength falls again in the direct ratio in which it had been increased. The only exception which I know to the contrary sometimes occurs in mania; some patients affected by that disorder being excited for days, and even weeks without any subsequent collapse.

The third cause whence fever arises is *irritation*, which is the effect of the application of various irritants, which increase the sensibility and redness of the part to which they are applied. Irritation is a term used very vaguely by physicians, and still more vaguely by surgeons; but I use it in this Lecture in the above sense; and shall hereafter explain its various meanings.

Common irritants may be arranged under *four* heads. 1. Ardent spirits, wine, strong malt liquors, and the like, when taken into the stomach. 2. Indigestible food and fruits. 3. The administration of some certain medicines, especially drastic purges, which are much too frequently given. 4. The local application of a low or high degree of temperature. Now if an individual happen to be weak, or have an anxious mind, or have any disorder of the liver, stomach, or bowels, if he be in that condition in which the sensibility of the nervous system and the contractility of the muscular are increased, then the application of an irritant to the body rouses the whole nervous system; the heart is excited to increased activity, and the hot stage of fever is established. When the impression is made upon the nervous system, it is, to use a figure of speech, reflected to the heart and vascular system. We come now to that state of the system, popularly called fever, which is produced in the three ways I have pointed out.

What is meant by the term *fever* thus used? *Fever* is merely an abstract term; and, in medical writings, any attempt at its definition has involved more of what is conjectural than any thing else. We have a great many idle expressions in common use, and one of these in connexion with fever is the term *idiopathic*, it is a word which admits of no definite application, and does not point out the real condition of the system. We have also a *symptomatic* fever in medical writings, almost equally inconclusive with the former term. What authors mean by *idiopathic* fever, is a fever in which there is no primary local in-

flammation, and they have assumed that it commences, advances, and terminates, without inflammation. It may appear of no importance, whether we use the term *idiopathic* or any other; but all speculative notions influence our practice, and this term conveys an erroneous idea, by implying that there is never any inflammation at the commencement, middle, or end of the fever. It is the substitution of conjecture for fact, and has been, in the practice of physic, the cause of destroying thousands of lives.

Fever may begin without inflammation, but it may become inflammatory in its progress. I shall not use the term idiopathic at all, as I consider it only calculated to mislead. We now come to the consideration of the term symptomatic fever. It is a term which has been admitted by CULLEN, and he has been followed by other nosologists. In his order phlegmasiæ, he has made the fever appear always as the mere effect of inflammation; but if you investigate this hypothesis, you will find it to be erroneous; for even in this order, inflammation is more frequently the consequence than the cause of the fever, as I shall afterwards prove. Therefore, I shall substitute the terms *simple* and *inflammatory* fever, merely to express the facts of the particular cases, and to designate the exact state in each of the vascular system.

You will remember, I have already observed, that when the heart's action, and the animal heat are simultaneously increased, then the simple or inflammatory fever is established. But in the congestive form of fever, there is a diminution of the heart's action as far as its power is concerned, and of the animal heat as far as its degree is concerned, marked also by the disturbance of some important organ which is the seat of the congestion, a congestion proved by an appeal to dissections in fatal cases.

The characteristics of common *simple* fever are the following:—You have an increase of the heart's action, and an increase of the animal heat, and no sign of either an external or internal inflammation, cross-question the patient as you please. With respect to *inflammatory* fever, you have, in addition to the signs enumerated as belonging to simple fever, the proofs of an inflammation either external or internal; and when these states

arise from a common cause, I designate them by the term common simple fever, and common inflammatory fever.

I do not wish you to try my opinions by any scholastic or collegiate standard, but by an appeal to facts. It is a duty which you owe to yourselves, to the profession, and to the public, to observe, to think, and to act for yourselves. Nothing is so fallacious as to take the words of this or that man, upon things in which the lives of our fellow creatures are concerned. Think for yourselves. The moment a man has learnt to think for himself, he is in possession of the grand secret of human improvement.

In common *simple fever*, 1st, the pulse is quicker than natural; the average of the pulse in the adult is about 70, in this state it is about 90 or 100. But in children you must recollect that the pulse is always quicker than in adults. 2. The animal heat is greater than natural. It is about 96° or 98° naturally; but in this affection it is about 100° on the surface. Here, then, you have two remarkable symptoms. You will find, generally speaking, that the heat is higher in the evening than in the morning; the cheek is more flushed, and the eyes look brighter. 3. There is some thirst. 4. Some change in the secretions: for example, a slight white fur upon the tongue; some change in the character of the stools: they are more offensive in smell, or they are lighter or darker in colour. There is some change, also, in the appearance of the urine. It is more turbid, or more high-coloured than natural; and the secretion of the skin is generally diminished. 5. Some loss of appetite. 6. Some lassitude; a word which is applied to debility of mind: and, 7. Some langour; a term which is applied to debility of body. And recollect that there is no distinguishable mark either of an external or internal part being inflamed

In common simple fever, the fluids appear to circulate more rapidly round the whole body; all the parts seem to be excited, but none absolutely inflamed. We have no single word in the English language to distinguish this state of circulation, and therefore I use the term simple excitement for this purpose. That such a state of the circulation does exist is indisputable. It is produced by running or walking for a long time; or by ex-

posure to a high temperature; the pulse becomes quicker and the skin hotter than natural, A similar state is produced by anger; or by strong diets or drinks. Let a man have a full meal of animal food, and wine after it; the circulation and heat will be increased decidedly: or, bleed a man to-day, and bleed him again to-morrow, and you will have the state of simple excitement established. As a fact still more decisive, we see the state of simple excitement on the subsidence of inflammation. A man has an attack of inflammation of the pleura; he is bled profusely, and he recovers; but for some time after the removal of inflammation, he is still found to have a hot skin and a quick pulse, plainly showing that the state of simple excitement does exist.

This state of excitement may be either general or local, and therefore I call it *general simple excitement*, and *local simple excitement*. In the first, the blood circulates more rapidly through all parts of the body. In the second, there is a certain topical accumulation, or determination of blood, perfectly separable from the state of inflammation. There are many facts to show this, blushing is an example; again, let a man hold his hand or arm to a fire, for a short time, and you have this state of the circulation produced in the part; apply friction to any part of the body, and you see the same thing; the eye in grief is another example, the conjunctiva is red with blood, and there is abundance of tears flowing over the cheek, yet there are not the combined signs of inflammation there. A still more striking example is to be seen in the conjunctiva of a patient labouring under scarlatina, the conjunctiva is streaked with red blood, yet it is not inflamed; there are not, I repeat, the combined symptoms of inflammation present, as pain, heat, redness, and swelling. Now, it is probable, that the internal organs undergo a like change; examine the tongue and the lining membrane of the mouth, during the process of mastication, and you will see that there is a greater quantity of blood determined to the part, which is therefore more red than usual, and I should say, this was another specimen of local simple excitement. In common simple fever, general simple, and local simple, excitement exists. The common simple fever can only exist in a sound state of constitution; now,

when it takes place in a person where the organs are all healthy, no organ suffers, and it passes off without having any other state produced, but if any organ should be previously weakened, or disordered, then that organ suffers, and the inflammatory fever is produced. You may perceive that this fever may pass into the inflammatory, and therefore, although the fever may be simple at its origin, you must not do what the old practitioners did, assert that the fever was always idiopathic ; I say, you must not assume this, for although a fever may be *simple to-day*, it may become *inflammatory to-morrow*, and even within a less period of time than I have now named. I have been in the habit of taking notes of the cases of fever which have come under my care for the last twenty years, and I have never found them two days exactly alike, the change being sometimes trifling, at others important. Now, supposing a fever has commenced and gone on as a common simple fever, what are the indications for its removal? They are three: 1, to lessen the heart's action ; 2, to lessen the animal heat ; and 3, to restore the secretions to a natural state. In regard to treatment, you will recollect, no doubt, that it is divisable into three parts, the medical, regimenial, and mental all these are important, and you must so combine them, that they may all tend to the same end. No one of these should be employed to the exclusion of another, but they are of the greatest value when combined.

The *medical treatment* consists first, in the administration of *aperients*. The best of these are calomel, rhubarb, jalap, cold drawn castor oil, small doses of the infusion of senna, with or without small doses of sulphate of magnesia. I shall first make a few observations on *calomel*. I said, when speaking of the treatment of the congestive fever, that we sometimes give calomel for a particular purpose, namely as a stimulant, it rouses the heart's action when other means fail, and it operates in combination with opium in a most excellent manner, and also emulges the liver and bowels. It operates, however, in common simple fever as a relaxant and aperient. If you see a *child* labouring under this form of fever, and give him, for example, *one grain and half* of calomel, with *three grains* of rhubarb, and

follow it up with *two drachms* of castor oil, you will find that it will be quite sufficient in the course of the day, and will produce three or four evacuations from the bowels, and this number should be obtained daily, as long as the heart's action and the animal heat continue higher than natural. Purging is not the only beneficial effect that it exerts; it acts also on the liver, and you will find that whenever a person is attacked by fever, that the secretion of the liver is often depraved: but the third effect of calomel in common simple fever is, that of a complete relaxant. You may give a child a dose of calomel and he will become sometimes faint and sick, either before, during, or after its operation as a purge. Whenever this is the case, you should only continue it as long as the heart's action and the animal heat are higher than natural. You should never give more than three grains in the course of the day for any time; I have lessened my doses of calomel very much, and if you ask me why I have done so? I answer, that I am, in fact, a mere student in the practice of physic, and that if I were to live to an immense age, I should be daily obtaining knowledge as to the more precise application of medicine, and should be consequently daily detecting former inaccuracies; having therefore discovered my error in this respect, I think it my duty frankly to tell you of it, as a warning to you. If you continue the calomel after the heat is very much lessened, you will have a ptyalism induced which may be difficult to remove, and produce much uneasiness. It should be given with small doses of jalap or rhubarb, or followed by about one ounce of the infusion of senna. The *second* medical mean, is the use of the *tepid ablutions*, and these should be employed two or three times in the day, especially toward evening, and you will find that the heat of the skin, and the frequency of the pulse, will be very much lessened by them. Recollect that the feet should be daily washed, the secretions of which become morbid, and if not removed, may be absorbed into the body, and this will equally apply to the perspirable matter of other parts of the skin. Now, if any sign of inflammation should occur in the progress of the simple fever, then general or local bleeding will be required, but not otherwise, if attention be paid to the regimenial management.

There is a golden rule in respect to diet, in the treatment of fever; when the heat is high and the pulse quick, the diet must be of a remarkably bland and farinaceous kind. It is impossible to sustain the strength of a patient in fever by strong food; you might as well try to build up a house in flames, and it is a circumstance not understood by the public, and even too much disregarded by the profession. It is the dread of weakness, in fever, which induces people to give strong food, and they reason thus: I am very weak, I was so before, I took nourishing food and was better: I am now very weak, and as I have found the plan to answer, I will try it again; but try it, and it is fatal. This analogical mode of reasoning is false, for here weakness is the effect of disorder, and not the cause. The best diets are the following: thin arrow-root made with water, thin gruel made with water, barley water, whey, sago, thin tapioca, or plain animal jelly; a small quantity of either of these at a time, as a small tea-cupful, given morning, noon, and evening, is all that is necessary. Of the choice drinks, too, the patient should be cautious; water is the best drink, and in some of the high forms of inflammatory fever, water is the only thing which is necessary both as a diet and drink. But in the simple fever you may allow a glass of lemonade, taking care that the juice be passed through a piece of muslin, so as to exclude the pulp. The skins, the seed, the fibres and the husks of fruits, very much irritate the mucous membrane of the stomach and bowels, and should be carefully avoided. Always after you have given your instructions, say to the nurse, give nothing else whatever. If you do not, you will find, at your next visit, that a number of things have been given to the patient, and the excuse will be, that you did not prohibit them.

3. *Rest*, in the recumbent posture; this tends very much to diminish the heart's action, and in many cases has nearly the good effect of blood-letting.

4. Regulated *temperature*. Take care that the patient be not loaded with too much clothing; he should be laid between clean sheets, and should be slightly covered, especially toward evening, and through the night. Leave particular directions that the

temperature of the room be not raised too much then; for it often occurs, that the nurse, more attentive to her own feelings than the welfare of the patient, will make a large fire for her own comfort. Always hang a thermometer in the sick chamber of a febrile patient, and never let it exceed 60° in common simple fever.

5. *Cleanliness* is the next point of the regimenial management, to which I shall call your attention. There is an odour from the stools, the urine, the breath, and the skin, which produces a state of atmosphere extremely injurious to the patient, if allowed to be concentrated. Let him always pass his evacuations into a vessel containing a little water, then let them be immediately removed, and, if necessary to be inspected, let them be kept in another room.

6. *Ventilation* is another point of importance. You may always admit fresh air into a room on one side very freely, but it is better to guard against cross currents.

7. *Quietude.* Always lay the patient in that room of the house in which there is the least noise; this is a circumstance which should be particularly attended to in towns. Another thing that you should attend to, is to see that the attendants do their business quietly, and that you do yours quietly also. There is one thing with respect to quiet which I shall here observe: it is a very inconsiderate, and sometimes even a dangerous, custom, which many medical men who keep carriages in London, and other large towns, observe, namely, allowing their servants to imitate the servants of the nobility, who thunder at the street door until they make every room in the house re-echo to the sound, and shake the whole house; "it is a custom," however, "a custom more honoured in the breach than the observance." It was not until after repeated reproofs that I could get my servant to adopt a different and quieter mode of obtaining admission, and even now he sometimes forgets my request. Another point to which you should attend is, the investigation of the moral character of the nurse. It is the duty of the medical man to give positive instructions to the nurse, and if she be not of a good moral character, it is very likely that she will betray the

confidence which is reposed in her, and thus may affect the safety of the patient, and the reputation of the practitioner. The North American Indians always select the most distinguished ladies of their tribes to fill the office of nurses, and by doing so they show their prudence and ingenuity, because they suppose them to act properly in the discharge of their duty. Although we cannot expect to obtain a countess or duchess for this office, yet we may obtain a character very essential, namely, an honest and obedient woman.

The next division of the treatment is the *mental management*. The human mind is often prostrated with the body, and no individual is more pitiable than one sunk under the pressure of a febrile affection. Therefore, we must take his mind into account; if the mind be very anxious, the fever very often terminates fatally; but if it be kept cheerful, the patient generally gets well. In consequence of this constitution of the human mind, it is necessary to prescribe *placebos*, but take care that these be so mild as to do no physical harm. The patient looks forward with considerable interest to the time of taking a draught or a pill, and, in fact, it keeps the mind placid and tranquil. Now, the best medicine of this kind is a *saline draught*, but this is generally given in too large a quantity; *ten grains* of the *carbonate of potash* in one ounce of water, and *two drachms* of fresh *lemon juice* will be quite enough, and this acts gently on the kidneys. Another is the *Mindererus's spirit*, or the *liq. ammon. acetatis*, one or two drachms of this may be given in some harmless vehicle every four or six hours. It may be of a little service, by inducing a gentle action on the skin, but, like the former, it is chiefly beneficial through the mind. Always be punctual in your visits, and perform your promises regularly; give the patient, too, when at all admissible, the confident assurance of his recovery. If required to give your opinion, in the way of prognosis, to the friends, you may do it in the following way: if the friends of the patient are intelligent people, if, in a word, they are people of common sense, lay aside all the humbug and mummery of physic, and explain to them in plain English, that the patient has such and such symptoms, that these symptoms point out such

and such a state of parts, and that such and such a treatment is necessary to remove them. And really, in the present advancing state of human intellect, it is necessary that you should divest yourselves of those technicalities which served only to shelter the ignorance of former times, and address yourselves to the common sense and understanding of the persons to whom you speak. If, on the other hand, you have to deal with persons so ignorant that all you could do would not make them understand the real nature of the case, then the best mode is to announce the disorder in some Greek or Latin word, with which they are perfectly satisfied, and will not ask you another question.

I knew a gentleman who practised in a very populous, but very illiterate neighbourhood, and he told me one day, that he was frequently assailed by these persons inquiring what such and such diseases were; and, said he, "you may declaim as long as you please against Cullen's Nosology, but I can assure you, that I find it extremely useful; for whenever I am puzzled what to say to them, I give them one of his fine cramp names; they are quite contented with it, and I have the credit of being a very clever fellow, who can cure all sorts of extraordinary affections."

LECTURE IV.

In the preceding Lectures I described two of the leading varieties of what I generically termed *common fever*.

The first leading variety was the *Common Congestive Fever;* a state of the system produced by the operation of common depressants, and marked by a diminution of the heart's action, by a diminution of the animal heat on the surface of the body, and by disturbance in the function of this or that organ, which is the seat of congestion.

Common congestive fever, I said, might terminate in three ways; 1st, it might be solved by the means employed; 2d, by these means it might pass into the stage of excitement; 3rd, it might pass into that stage by the natural efforts alone.

The second leading variety of fever which I considered was, the *Common Simple Fever;* a state of the system in which the heart's action is rather quicker than natural, and the animal heat, on the surface, rather higher than natural. In this variety the blood circulates with greater rapidity round the whole body than natural; so that all parts are excited, but none positively inflamed. I also endeavoured to show that this variety of fever might be produced *directly* and *indirectly;* that it was produced *indirectly* when it arose from depression, that state produced through the influence of depressants, which I call the stage of depression, and in which the blood is driven from the surface to the centre; but the action of the heart is roused by this accumulation of blood on its right side, it exerts itself powerfully, and throws the blood from the internal to the external parts of the body; the animal heat is thus again restored on the surface, and the whole vascular system, through the heart, is in a greater state of activity, or, in common language, fever is fully developed. But this condition, called fever, may arise *directly*, without any cold stage at all; the stage of excitement may be immediately produced through stimulation, the effect of stimulants, and then it commences by the stage of excitement, and terminates by the stage of collapse. Stimulants increase the heart's action at once through the nervous system, and fever is produced having only two stages. In regard to irritants, it may be mentioned that low and high degrees of temperature are both irritants; a stream of cold air in motion excites sometimes inflammation, whilst cold air at rest excites no such effect. This was particularly observable in the late expedition towards the north; the men could withstand the influence of the atmosphere even when many degrees below *zero*, if the air were at rest; but when exposed to it in motion, with even a light breeze, the cold was insufferable as an irritant. Again, high degrees of temperature produce an increased sensibility and redness of a part; the heat operates first on the nerves of the part, and then on the capillary vessels. *Local irritation*, however, is sometimes combined with a general shock or depression; and then, if fever be regularly developed, there are three stages,—a first of depression, a second of excitement, and a third of collapse.

Let me advise you to be particularly careful in the examination of all abstract terms; we think in words, and, if our thoughts be distinct, our words will be clear and intelligible; but if our thoughts be not distinct, the words will be obscure and unsatisfactory.

I have employed the distinctive terms *general simple excitement*, and *local simple excitement;* as an example of the first I might instance the state of the circulation in advanced pregnancy, in addition to the former examples. The blood then often circulates with greater rapidity than usual, yet, being equally distributed, it does not meet with any interruption, and consequently no inflammation is produced. But in local simple excitement the capillary vessels of the part are somewhat more loaded with blood than in the ordinary state, yet the combination of symptoms denoting inflammation is not present, as I have already shown.

The great object, in the management of common simple fever, is to prevent the occurrence of inflammation. Inflammation, it must never be forgotten, may arise in the progress of common simple fever, and thus it may be converted into common inflammatory fever, though unquestionably it often begins and terminates as common simple fever; that is to say, it is merely accompanied by general and local simple excitement; conditions of the vascular system which, I repeat, are separable fairly from inflammation.

Common Inflammatory Fever is the next variety; and it may arise, *first*, as a consequence of the common congestive fever; *secondly*, as a consequence of the common simple fever; and, *thirdly*, it may arise, independently of either one or the other, as a primary variety. It is very important, in a preventive point of view, to remember the *remote predisposing and exciting causes* of common inflammatory fever, and therefore I shall begin by considering some of the more remarkable of these causes.

I have already mentioned and illustrated, that the whole range of pathological inquiry might be divided into *three* great leading conditions: *first*, predisposition; *secondly*, disorder; and *thirdly*, of disease. Predisposition is the tendency or liability which certain parts of the body have to disorder or disease. Some of the ancients were well aware that the human body contained, within

itself, certain propensities to disorder or disease. For instance, DEMOSTHENES, in one of his addresses to the Athenians against PHILIP, makes use of this very circumstance, by way of encouragement, telling them, that however strong he may seem, now that he is successful, yet if he but once receive a shock, all his weak parts would be discovered, as happens in the human body, whether they be sprains, fractures, or other faults. CELSUS also says, that the human body, apparently sound, will show its weak parts if disturbed. There is, however, a higher authority than either Celsus or Demosthenes, to which we can refer for the support of this opinion, namely, observation guided by *common sense*. Indeed there is scarcely a man to be found in civilized society, who might be said to be born perfectly sound in all the physical structures.

Predisposition admits of some divisions and sub-divisions. It is, *first, hereditary*. If we look to the affections of particular families, we cannot but perceive that this is the case; some are especially attacked by inflammation in a particular part, as in the head, windpipe, lungs, or throat. LORD BACON observes, that there is one point of anatomy which has not been sufficiently investigated; namely, comparative human anatomy. Now, the probability is, that if we were to examine the internal structure of organs, which are more uniform than the external, in different families, we might be able to throw some light on this obscure department of predisposition.

Another, or a *second*, division of predisposition, is that which I have termed *ætal*, or which is connected with age. In *infants*, in particular, we find there is one organ liable to suffer, for example, the brain, partly perhaps from its large size in proportion to the body; *secondly*, the sensibility and the contractility is also greater in children; hence stimulants and irritants make a greater impression on their nervous systems than on that of adults; and, by a law of the animal economy, it happens that when the sensibility of the nervous system is increased, the contractility of the muscular system is also increased. *Thirdly*, There is the irritation of dentition in children, which is often followed by fever and by some attack of internal inflammation. *Fourthly*, Children have a more delicate skin, and a more excitable state of the

mucous membranes internally, than the adult, and therefore these are more liable to become inflamed. *Manhood*, and middle age, have their peculiarities; the serous, the fibrous, and the cellular membranes are then most disposed to inflammation; and in *advanced age*, the head is a part very liable to be affected, probably from the state of the venous system becoming congested.

The *third* division of predisposition is *sexual*. There are peculiar organs, both in the male and in the female; but the sensibility and contractility is greater in the latter than in the former; their feelings are more acute, and their frames are more like those of children, and consequently some organs are more liable to inflammation.

Fourthly. *Predisposition* is also *acquired*, by habits operating after birth, or by the occurrence of some disorders; as measles, catarrh, small pox, and scarlatina; which, when severe, never leave the parts of the body which had mainly suffered in the same state in which they found them; but leave some latent fault, thus laying the foundation for future disorder or disease. Some *latent fault*, then, is the *first subdivision* of *acquired* predisposition. A *temporary increase* of the *sensibility and contractility* of the body is the *second subdivision* of *acquired* predisposition. This temporary increase of the sensibility and contractility proceeds sometimes from *heat*. It arises from this cause in hot climates or in the summer of our own country; therefore many persons cannot take the same drinks or diets in summer as in winter without prejudice; for such as would do no harm in cold weather, will do so when the system is thus excited; and it is owing to this circumstance that bowel complaints are so frequent. This increased sensibility and contractility may arise, secondly, from *mental anxiety*, operating first on the brain, and whole nervous system, and then on the heart, and other parts of the muscular system. It may arise, thirdly, from *want of sleep*; and, fourthly, from some *primary disorder* of the stomach, liver, bowels, and skin; or it is often induced by the use of particular medicines, especially mercury, so fashionable in London that men are continually dosing themselves with calomel or blue pill, and doing themselves a great deal of mischief. Therefore, I consider it my duty to

enter my protest against so irrational and injurious a practice.

The *third* subdivision of *acquired predisposing* causes, is *general debility*. It is in this way that weak convalescents are liable to attacks of inflammation. They are peculiarly susceptible of the influences, not only of stimulants and irritants, but also of depressants. It is most important, in the treatment of fever, to regard the state of convalescence; for then patients, imagining that all danger is past, incautiously expose themselves to some exciting cause of disorder, and an attack occurs under the most unfavourable circumstances, and often proves fatal.

The *fourth* leading division of *acquired predisposition* is what the Greeks call *plethora*. It means a superabundance of blood. This plethora may be either *general* or *local*. When patients have general plethora, they have what has been termed the phlogistic diathesis. The *general plethora* occurs first in individuals who have any firm fibres, or generally of a florid complexion, and who bear blood-letting very well; but it, secondly, occurs in other individuals of a flabby fibre. There is a peculiarity in the appearance of the blood in both these cases: it appears to be loaded with a superabundance of the red particles. It occurs most commonly in persons who have retired from active life; who eat, drink, and gorge themselves; who take little exercise, and have torpid bowels. The disorder takes place in this or that organ where the most blood is accumulated. There is also a *local plethora*. The patient shall be thin and spare, and the blood show a deficiency of the red particles, yet that individual shall be liable to an accumulation of blood in some part of the body. Perhaps, when we know more of the nervous system, we shall be able to explain this circumstance. The strong probability is, that the cause of this local plethora is the irregular distribution of the nervous energy, giving rise to an irregular distribution of the blood in the capillary vessels.

Having considered the predisposing causes, I shall now make some remarks on the *remote exciting causes* of common inflammatory fever. These, you will perhaps recollect, are depressants, stimulants, irritants, and interruptants; the influence of which I

have already explained, except the last. As an example of an *interruptant* producing inflammation, I may instance a ligature applied round a limb interrupting the circulation, by the pressure of the strictured part, as in strangulated hernia. Interruptants all act as irritants, and produce inflammation below the point where the interruption takes place.

It is an interesting point to ascertain in what relation fever stands to inflammation. Sometimes fever is the effect, and sometimes it is the cause, of inflammation. We have supposed, with the public and the profession, that in fever a quicker pulse and a higher heat of skin exist than natural; and we have seen that this state sometimes arises indirectly from depression. When the stage of excitement has taken place in that case, if some part of the body possess an hereditary or acquired weakness, it becomes inflamed, and then the inflammation arises as an *effect* of fever, and not as the cause. When the fever arises from *stimulation*, and inflammation takes place, that inflammation is to be regarded as the effect of fever, since it plainly follows the latter. Take, for example, a weak convalescent; give him a basin of strong broth; it produces a state of general excitement; and that part which has been weakened by the previous disorder will become inflamed.

Inflammation, however, may be the cause of fever. Thus, by irritating the surface of the body of an infant by a blister, fever is not unfrequently produced; and also, in like manner, from the irritation of an accident or operation, when it amounts to inflammation.

Some ingenious authors have not only insisted that fever is invariably attended by inflammation, but that this inflammation is always seated in a particular part. So many as four writers have fixed it in the brain, and others in the lining membranes of the intestines. The former seem to think, with the poet, that the head is

"The dome of thought, the palace of the soul,"

and they have wished to lodge fever in a splendid apartment, in the drawing-room with folding doors, in the cerebrum and cerebellum. It might as reasonably be placed in the great toe; and

why not assign it one abode as well as another? I am sure that many aldermen, who take turtle soup and punch at the same time, would much rather have it in their toes than in their heads. Suppose that a man were to fall from a height to the ground, he fractures his arm, and lies quite insensible; the system has received a shock and the surface is clayey cold. Two students are passing by, and they come up to him; one is a *theorist* in favour of the brain, the other in favour of the mucous membranes; the first says, "This man's injury is in his head, he has an attack of inflammation there;" the second says, "No, it is not in his head, but in his stomach, for you see he is retching;" a debate takes place, whether the patient is to be bled or not. An old practitioner comes in when they have just agreed about bleeding, but he says, "Whether his head or his stomach be inflamed I do not pretend to know, but one thing I do know, that if you bleed him you destroy him at once."

If you examine the body of a patient who has died of fever, you will frequently perceive no trace of inflammation in the mucous membrane of the intestines; and if you examine another, you can find no trace of inflammation in the brain; and as no evidences existed of it in either case during life, it is in vain to say that an inflammation either of the brain or lining of the bowels is the exclusive cause of fever. Indeed, fever may arise and advance without inflammation at all; and when inflammation does arise, from common causes, it is oftener the effect than the cause of fever, and may and does attack *every* structure of the body, more particularly the weak parts.

LECTURE V.

In my last Lecture I detailed the *remote causes of common inflammatory fever*, which are either predisposing or exciting. The predisposing causes are those which give a tendency or liability to disorder or disease. The exciting causes are those

which occasion either the one or the other, according to the intensities of their application, or the predisposition of the parts attacked.

I would strongly recommend you to arrange your knowledge under distinct heads; if you do not do so, your brains will be complete lumber houses, and you will never be able to call forth the particular information on that point on which it may be required. I have, myself, been accustomed to arrange my ideas under particular classes, and I have found the greatest benefit from this plan in my pathological and practical investigations.

The *predisposing causes* of inflammation admit of divisions and subdivisions.

1. *Hereditary;* the likeness which exists in the countenances and forms of particular individuals of the same family may be considered as a proof of this; and if Lord BACON's hint had been followed up, I have no doubt but that we should have found the *internal* likenesses of the body still more remarkably to prevail in the same families. RAY long since observed, that there is a greater irregularity in the distribution of the arteries and veins on the surface of the body than internal organs. Now admitting this to be the case, we may infer why certain families should have a greater tendency to certain diseases than others, from peculiarities of internal structure. 2. Predisposition is what I have termed *ætal*, or connected with age. 3. It is *sexual*. 4. It is an *acquired* predisposition, which admits of four subdivisions. *First*, Some latent fault, the effect of improper habits, or of previous disorder or disease, which leaves some latent fault. *Secondly*, The temporary increase of the nervous sensibility and the muscular contractility of the body, which may arise from an impression made on a part or on the whole of the nervous system. You must never consider any individual safe who has a permanently furred tongue, for that generally attends the above condition, associated with topical tendencies. *Thirdly*, General debility, which is most remarkable in weak convalescents, in whom a relapse is particularly apt to occur. *Fourthly*, General and local plethora; the first consisting in an universal overplus of blood, the last in an excessive turgescence of particular structures only. Both

these states powerfully predispose, and at last even excite disturbance.

I have mentioned the *remote exciting causes* of common simple and common inflammatory fever, and I endeavoured to explain when fever stands in the relation of a cause, and when of an effect to inflammation.

When fever takes place indirectly through depression, and when in its course some part previously weak becomes inflamed, then the fever must be considered as the cause of inflammation, since it is the antecedent in the series of symptoms. If fever arise from stimulation, and if in its progress inflammation appear, that inflammation is in like manner the effect of fever, because it is consequent, or follows the latter. But when some irritation is immediately applied to the body sufficient to produce not local simple excitement, but an actual inflammation, then the fever which follows must unquestionably be regarded as its effect. *Irritation* is a word which has been used very loosely, as I before observed; but I use this term now to express those two local conditions, namely, local simple excitement and local inflammation, which I have shown to be different in some respects, by a reference to familiar facts.

I had occasion to notice certain hypotheses, broached by individuals whom I really respect, because they have furnished something to the stock of general science; but separating their conjectures I have deemed it right to protest against them, because they are fallacious, and even dangerous, when applied to practice. Whatever doctrines I may have already inculcated respecting fever; whatever doctrines I may hereafter inculcate on other points, I wish you only to consider, that you may compare them with facts, and admit none but those which your own observation confirms. All human opinions are either false or true: bend to no human authority, ancient or modern, in medical science; bend only to the truth. You have a very easy mode of ascertaining whether what a man says is true or false, by referring to facts, which is the test which you should always apply. I have endeavoured to show, in the preceding Lectures, that there are two states on which the two varieties of fever already described

principally depend, namely, the state of congestion and the state of simple excitement. The state of simple excitement may exist without inflammation; and again, inflammation may exist without any symptoms of fever. Inflammation, therefore, is not an essential part of fever. A common boil is illustrative of this, if the system be in a healthy state, otherwise neither the nervous system nor the heart is disturbed, consequently you perceive no fever; inflammation, in a word, then occurs without fever. Besides all the signs of perfect congestive fever are opposed to those of inflammation. *Inflammation* is merely an abstract term, comprehending the selection and combination of certain symptoms. *What are these selected and combined symptoms?* They are the following: 1st. *Heat;*—2. *Redness;*—3. *Pain;*—and 4. *Swelling.* You will find that CELSUS considered these four symptoms as the indications of inflammation; and all medical men have agreed, since his time, that these are the most characteristic signs of that complicated state called inflammation.

The next thing is to inquire, what are the *pathological conditions* indicated by these signs, which must not be confounded with the conditions on which they depend. To take a distinct view of this subject, we must separate it into parts; and therefore I shall begin by considering the state of the *vascular system.* It appears that the capillary vessels, the minute termination of the arteries and the veins, if we except the absorbents, are the immediate seat of inflammation. But *three circumstances* take place in the vessels merely of an *inflamed part*, *two* of which are connected with the *capillary* vessels, and the *third* with the *larger* vessels.

The changes which take place in the capillary vessels are the following: *First,* These capillaries, which convey a colourless fluid in health, now that the part is inflamed, *convey red blood.* You have a very conspicuous instance of this in an inflammation of the eye, the conjunctiva of which is blanched and colourless in health, but it becomes inflamed, and the vessels, then admit the red particles. The *second* change which takes place in the capillary vessels is, that their *diameter is increased;* we have an evidence of it in inflamed conjectiva, and also a direct one after

death ; every anatomist knowing that the vessels of an inflamed part admit of a more easy injection than the vessels of an uninflamed part. The *third* change which takes place in the vessels of an inflamed part is to be found in the *larger vessels*, both arteries and veins. The larger arteries leading to the inflamed part, and the larger veins leading from the inflamed part are alike over-distended. This appears explicable on two principals ; 1, The over-accumulation of heat in the inflamed part, relatively to that of an adjacent healthy structure : and, 2, The probable interruption to the circulation of the blood through the capillaries of the inflamed part, so that an over-distension and turgescence of blood there must be the consequence. We have proofs of this, as I shall presently show you, meaning to keep to facts, and, as far as is possible to exclude mere conjectures. With respect to the large arteries and veins being over-distended, we have distinct evidences of the fact. Let the right hand and wrist be inflamed, as in acute rheumatism, the heat will not only be somewhat higher than that of the opposite hand; but if you examine the pulse at the radial artery leading to the inflamed hand, and compare it with the pulse at the radial artery of the other hand, you will find that it is of a large volume, that it seems to contain more blood than the other. The carotid artery affords another example ; let the brain be inflamed, open the shirt collar, and you will perceive that the carotids are more distended than natural. As to the veins, if the throat be inflamed, on examination you will see, especially by the light of a clear sun, the veins rambling over the fauces much more distended with blood than is natural. Here then, are three changes connected with the vessels of the inflamed part.

The leading *phenomena* of common inflammation, are, 1st, *heat*. The heat of an inflamed part is always something relatively higher than the heat of an uninflamed part on the surface of the body, not, perhaps, at all higher than the heat at the heart where it is about 100°, whilst the superficial parts are about 96° or 98°. There is in the healthy condition of the body a remarkable uniformity in the distribution of the animal heat, and it is one means of preserving the healthy condition of the capillary sys-

tem. Let a part be long kept below, or raised above the natural standard, certainly a change takes place in the capillary system, the blood being deficient in the one case, excessive in the other there; a certain uniformity of heat is then very important in preserving the healthy state of the capillary circulation.

In the healthy, a very remarkable relation exists between the size of the *red*, and the other *particles* of the blood, and the capacity of the capillary vessels. If you examine the web of a frog's foot through a microscope, you will see the red globules passing through certain minute vessels; but if you irritate the animal strongly, so that it struggle much, the red particles become obstructed in some branches; but then a provision is made for this obstruction, by what has been termed the anastomosing ramifications, along which, at last, the obstructed globules pass. Some relation also exists between the blood as a mass, and the vessel; if you apply two ligatures on a vessel, the blood contained between them will not coagulate so soon as it does when drawn from a vein into an ordinary cup. But, to resume the subject of inflammation, the heat is higher, relatively, in an inflamed, than in an uninflamed part. How does this arise? Sometimes it seems to arise from the impression of a foreign body acting as an irritant to the nerves, and sometimes it arises merely from a hurried circulation of the blood operating too as an irritant to some weak part. Caloric expands fluids; it expands the blood, and of course the blood expands the vessels, and in that way we might account for the redness, and for the increased diameter of the vessels; though, with this condition, it is possible that the nervous energy may have some connexion. We have reason to believe that the natural relation is then lost between the size of the red particles and the capacity of the vessels. Two of the symptoms then of inflammation, the heat and redness, have been accounted for in some degree.

The next point for consideration is the *pain*. We know that the blood materially influences the sensibility of the body. There is an accumulation of blood about an inflamed part, and therefore its sensibility is increased for a certain time. A very curious

fact appears to show that the sensibility very much depends on the kind of blood; venous blood is not so calculated to maintain sensibility as the arterial. If an intense inflammation take place in the bronchial lining, the blood at last is not properly decarbonised, or oxygenated, and it seems to act on the brain as a complete narcotic, smothering the sensibility. In such cases there is often no pain felt, even when the brain is much inflamed. Some structures are more sensitive than others, giving, therefore, more pain when inflamed; and if such a part be put upon the stretch, it causes still greater pain. If inflammation, for example, take place about the finger or toe, the patient has very great pain; but this subsides when the distension is removed by the evacuation of a little matter. The fourth and last symptom is *swelling*. The blood is expanded by the heat, the vessels are consequently dilated with blood, and the part swells; but there is another concurrent cause of swelling, namely, the effusion of fluid into the surrounding cellular membrane.

The next point to inquire into is the *state of the larger vessels*, both arteries and veins, connected with the inflamed part. There are *two reasons* perhaps, why the larger arteries leading to the inflamed part should be *over distended*, the first is, the increased heat about that part, and the second probably is, some interruption to the passage of the blood through the capillary vessels there, by which the arteries leading to the part become surcharged. Take, for example, an inflammation of the right wrist; you perceive that the arteries throb very violently which lead to the inflamed part, and these arteries are said to be in a state of increased action. The term increased action, is used most incorrectly in medical writings, count the number of pulsations in the radial artery when the right wrist is inflamed, and of the carotid artery when the brain is inflamed, and they will be found to correspond to the number of contractions of the heart, and to the pulse in every other artery. If you can have the opportunity of examining a large artery expand in the living body, you will find that it does not alternately dilate and contract, as is commonly and erroneously supposed. The truth is, that there is no such in-

creased action at all in the vessels in or about the inflamed part, their diameters being merely increased from the causes before mentioned.

It has been said, that the capillary vessels have the power of circulating the blood in the human body, independently of the heart's action, and this has been inferred by applying a ligature on the aorta, near the heart, the circulation still going on for some time afterwards. This, however, might be accounted for upon the ordinary laws of nature. Observe the tide passing up a river; it goes on flowing and flowing till it becomes level with the banks, but it begins to ebb at the mouth of the river, while it continues still to flow a few miles higher up, from the impulse first communicated. It was upon this principle Newton supposed, that the tides would continue to ebb and flow for some time as usual, if the moon and the sun were removed from our planetary system. We need not be surprised then, that the blood should circulate for some time when the forcing power of the heart has been withdrawn.

The *capillary vessels*, however, are endowed with their proper powers. The first is *elasticity*, which exists not only during but after life; the second power is *contractility*, by which they accommodate themselves to their contents, and this only exists during life. There are many facts to show that the capillary, and even larger vessels have these properties. In the summer the veins on the surface of the body are remarkably distended; there are then some pounds of blood circulating on the surface of the body more than in the winter; and in the latter season, when the surface is cold, more is proportionably accumulated in the centre of the body. Another example is to be found after blood-letting: you bleed, say a person who has a strong large pulse, and you continue to bleed him until his pulse becomes a weak, small, fluttering thread, the arteries having contracted to the diminished size of the column of blood, for if they had not done so the pulse would have been as expanded as before the operation.

There are not only changes taking place in the *vessels*, but even in the *blood* itself of an inflamed part. The blood, in its progress through an inflamed part, becomes darker and darker; and if the

part be viewed through a microscope, the red particles appear to undergo a change, assuming a flocculent appearance, and at last absolutely stagnating in that part. If you examine it attentively you will find, that all the anastomosing branches are gorged with blood; now if there were no interruption to the passage of the blood through the inflamed part, how comes it to pass that these anastomosing branches are all overloaded with blood? We can produce inflammation in any part by interrupting the return of blood from it, as happens in the case of strangulated hernia; or in applying a ligature to any portion of the body, when you soon produce all the phenomena of inflammation. It seems therefore proved by facts, that there is a change in the condition of the capillary vessels, and also in the condition of the blood in them.

There is an hypothesis which assumes that in these cases, the vessels alternately contract and expand. There is no doubt that they possess contractility, which on certain occasions they exert, if I may so speak, but I do not think that they alternately contract and dilate. I have seen the carotid artery of a horse laid bare, and by accident likewise the arteries of the human body, yet I have never seen them contract and dilate alternately. Besides, if it were admitted that the action of the arteries is increased in the inflamed part, the blood would not circulate more rapidly there than any where else, on the known laws of motion. We have every reason to believe that there are certain laws imposed by the Deity for the regulation of organized bodies as well as of dead matter, and one of these laws is that action is equal to reaction, but in an opposite direction; so that if one portion of an artery contracted and dilated more rapidly than another portion, the blood would not circulate more rapidly there. But how could we tell exactly when a vessel had an increased action, even allowing it to exist? how can we measure correctly whether the red particles pass more rapidly through one part than through another? surely we cannot detect the difference, if any, by the human eye, or any known auxiliary.

It appears, from what I have said, that the *pathological condition*, which I have termed inflammation, is the result of several concurrent states or changes in the inflamed part, and I shall now

sum up these. There is, 1. A change in the *nerves* of the inflamed part, the sensibility being affected; we know also that there is another change which takes place partly through the nerves, namely, the change in the heat of the parts. 2. There is an expansion of the blood in the capillary vessels; their diameters are consequently increased, and in all human probability their contractility is diminished, so that the blood undergoes some interruption in its passage through them. 3. There is some change in the *constitution of the blood itself*. The blood changing colour in its passage through that part, the red particles becoming flocculent, and the mass of blood there stagnating at last. Thus it is rendered nearly certain, not only that interruption occurs, but that the natural relations between the size of the blood's particles and the capacities of the capillaries are lost at the same time.

Thus far I have considered inflammation in reference to *common causes;* but, in the progress of these inquiries, when, in fact, I shall come to the consideration of the peculiar causes, it will be shown that the blood then is one of the main agents in the production of inflammation; not merely the quantity, but the kind of blood, very much modifies the character of the inflammation. Take *vaccinia* for an example, you have heat, redness, pain and swelling; you have the combined signs of inflammation present, but as this inflammation arises from a peculiar cause, you have a peculiar appearance mixed up with the common ones. Therefore it is of very great importance to take into account the specific effects which are mixed up with the results of common causes. A small portion of *malaria* imbibed into the body inflames the brain, the spinal cord, the bronchial lining, and the lining of the small intestines at the same time, and the probability is, that it does so through the blood alone. The same appears to take place in *small pox;* the contagion of small pox inflames the skin, and in severe cases the lining of the air passages. Again, in measles and scarlatina, similar conditions occur. We have abandoned, without any good reason, the humoral pathology, as I shall hereafter more particularly explain; wishing at present chiefly to confine your attention to common inflammation, the immediate and remote effects of which will form the subject of my next Lecture.

LECTURE VI.

INFLAMMATION is *acute*, *sub-acute*, and *chronic*. As in these Lectures I shall often use these terms, it is right that I should attach a definite meaning to each, and, indeed, it is my intention to explain, as I proceed, every such term as I may have occasion to adopt. If ever I forget to do so, I hope that you will demand an explanation; for if I have a definite idea, I can find a word to express it; but if I have not a definite idea, I will not attempt to conceal it, but at once acknowledge to you my ignorance on the subject in question. By *acute inflammation*, I mean the highest degree of inflammation, which arises suddenly, advances with rapidity, and terminates in a few days, if left to itself. By *sub-acute inflammation*, I mean a lower degree of inflammation than the acute, which arises less suddenly and severely, has a more protracted course, and, if left to itself, does not terminate in the first week, but runs on to the second or third week. When inflammation is acute or sub-acute, it is attended by fever, which is higher in the former, and there is less local disturbance in the latter. By the term *chronic inflammation*, I mean an inflammation which begins and goes on very slowly, and which is generally unattended by fever for a considerable time after its formation. When inflammation is acute or sub-acute, the system is attacked, as it were, by storm; an alarm is excited throughout the whole, or, to speak less figuratively, a considerable disturbance, called fever, is produced; but when inflammation is chronic, it begins and proceeds so very insidiously, that little or no general disturbance arises for some time.

I shall have occasion also to use the terms *active* inflammation, and *passive* inflammation. When inflammation is active, it is attended by a very high degree of fever, by a remarkably hot skin, and by either a full expanded pulse, or a smaller, but a hard contracted pulse, feeling like wire or whip-cord beneath the finger. But what I mean, by passive inflammation, is that attended by a subdued or masked form of fever, in which the heat upon the surface is scarcely higher than natural, and in which the pulse is

remarkably soft and compressible, the heart's action being really diminished in natural force, while the capillary vessels of some part remain engorged. We have an example of the active and passive inflammation in some cases of typhus fever, the active at the commencement, and the passive at the end. At the former period, the skin is in such cases intensely hot, and the pulse expanded, while some organ is acutely inflamed; this state continues for five or six days; then the heat begins to fall on the surface, the pulse becomes subdued, the muscular power prostrate, and the tongue glazed and brown. Now in what does this change consist? There is always a remarkable deficiency of force in the action of the heart, whatever may be its frequency. In active inflammation, the heart's action is increased; but in the passive it is diminished. This distinction between active and passive inflammation is of the greatest importance in the practice of physic. If you were to treat an active inflammation in the same manner as a passive one, you would be extremely unsuccessful. If, on the other hand, you were to treat a passive inflammation as you would an active one, it would generally be attended by fatal effects. If, for example, you were to treat an inflammation of the lining membrane of the bronchia in the last stage, as you would an inflammation of the pleura in the first stage, the destruction of the patient would in all probability be the consequence of such rashness.

If I have explained myself with any degree of precision, you must have understood how *inflammation* immediately arises from common causes; it does so in *two* ways:—1. By the increased action of the heart operating on a weak organ, just whether that increased action arise from depression, stimulation, or irritation, when the latter only amounts to local simple excitement. Hence five or six different persons, exposed to the influence of the same agent, will have inflammation produced in five or six different organs, because these happened to be the weak parts, and, therefore, predisposed to the inflammation. 2. It arises from an irritant, which produces not a local simple excitement, but an actual inflammation, which may arise directly from an impression made upon the nerves by a foreign body, or it may arise indirectly,

through some change in the momentum, quantity, or kind of blood acting on the nerves and capillary vessels.

Having premised these remarks, I proceed to investigate the *terminations*, or rather stages of inflammation, but, for the sake of simplicity, I shall call them the

EFFECTS OF INFLAMMATION.

These effects have been called *local* and *constitutional*. The term *local* is very distinct, since it applies to a particular part of the body, and nothing more; but the term *constitutional* is remarkably obscure; it is one of our cant or convenient words, more calculated to conceal ignorance than to explain facts; it is a mere subterfuge; one of those many juggling expressions by which we deceive ourselves, and mislead others,

If the word *constitution*, in physic, mean any thing distinct, it means the whole body, and as the whole body is made up of particular parts, so we must look to those parts, solid or liquid, for an explanation of all morbid affections. Logically speaking, there is no such thing as constitutional disorder separate from local disorder or disease. We have, I say, no substantial reasons for supposing that any affection is constitutional, independent of a local disturbance somewhere; it is seated either in some part of the solids or liquids of the human body, and if we take the trouble to examine, we shall, as I before said, find it in some of these influencing the rest. This general use of a nondescript term, of a mere quibbling deceit, has been the cause of many deaths, by the indistinct pathology and dangerous practice to which it has led. If I find such momentous evils arising from the abuse of language, I shall fearlessly expose them.

The *effects* of *inflammation* are *immediate* and *remote*. The immediate effects are those which occur in or about the inflamed part. The remote effects are those which are produced in the distant parts, solid and fluid. This view of the remote and immediate effects of inflammation involves two things, the consideration of the *external pathology*, and of the *internal pathology*. In the investigation of both, if we are ever to have any precise notions, we must view them as organically connected, and entirely

exclude such vague terms as constitutional disorder and constitutional derangement.

England has produced great men in the medical profession, HARVEY as a physiologist, SYDENHAM as a physician, and HUNTER as a surgeon. The last named individual threw considerable light on the subject of inflammation He philosophically endeavoured to mark its different changes, to one of which he affixed the expressive term, *adhesive*, to another, *suppurative*, and so on; but as this method has not been generally followed by physicians, I shall take the liberty, for the sake of distinctness, of introducing some slight changes in the nomenclature of the effects of inflammation.

The *immediate* or *local effects* of inflammation are chiefly the following:

1. EFFUSION;

which admits of three subdivisions; the *simple*, the *adhesive*, and the *suppurative* effusion. The *simple effusion* is either an increase of the natural secretion of the part, or the transudation of blood. We see an example of this when the eye is inflamed; an increased effusion of tears takes place, and sometimes there is even an escape of blood between the conjunctiva and sclerotic. The same thing happens in the other parts of the body; in the mucous membrane of the air passages, and of the bowels in particular. But hæmorrhage, as CELSUS justly observes, may occur in three ways: 1. From a rupture of a vessel; 2. From an erosion of a vessel; 3. From transudation. In inflammation, the effusion of blood is generally by transudation; the blood escaping as if from the mouths of the vessels, as CELSUS has expressed it, "*per ora venarum.*"

The *second* kind of effusion is the *adhesive effusion.* This is an effusion of a material which has been termed coagulable lymph, and, in chemical language, fibrin. What is effused appears like jelly, and is sometimes copiously poured forth from serous membranes internally. It serves for a bond of union between divided parts. But sometimes it unites the surfaces of natural structures together, as the pleura pulmonalis and the pleura costalis. This union of parts takes place in two ways; first there is an effusion

of lymph; in the next place there is a streak of blood observed on that part of the effusion lying in contact with the natural surface: this streak of blood becomes a cylinder; it ramifies; the outer layer is formed of soft blood, the inner layer is composed of fibrin; it becomes permeable, and, circulating blood, the parts are finally knit together as one structure. This fact, the knowledge of adhesion being the principal bond of union, is extremely useful when applied to surgery. CELSUS distinctly speaks of it as a mode which nature adopts to prevent the after occurrence of hæmorrhage, and has distinctly pointed out the method of tying divided arteries; yet this fact was overlooked for many centuries, so that surgeons used the actual cautery, during and after operations, to prevent hæmorrhage, till the ligature was introduced by AMBROSE PARE, a French surgeon.

BENEDICTUS, TALIACOTIUS, the Indian Brahmins, DUHAMEL, and HUNTER, have all shown that a part of the body may be lopped off and united again, by adhesive effusion, to the part from which it had been divided. I recollect a case in which a man had, by some accident, completely cut off the top of one of his fingers; it was brought to a surgeon, an acquaintance of mine, who cleaned the cut surfaces, and accurately replaced them; the parts united, and thus the finger was saved. It shows how careful we ought to be in forming our opinions; that we should not reason on any thing *a priori*, but entirely from facts. When a part is divided, and the edges having been brought together, they at once unite, the wound is said to be healed by the *first intention*, a term used by GALEN to distinguish this mode of union from that by granulation, which he called healing by the *second intention*.

The *third* kind of effusion is the *suppurative*. Suppuration is the secretion of pus from the vessels of an inflamed part. It is a fluid like cream; and if you view it through a microscope you will discover that it contains minute globules. The suppurative effusion is more common in some structures than others, especially so in the cellular membrane; and, when it occurs in a deeply seated part, it frequently has a tendency to advance towards the surface of the body.

Sometimes we see examples in which the simple adhesive and

suppurative effusions are taking place at once, as in the common boil. In other cases we may see the effusion of mucus, lymph, and pus, successively taking place from the same membranes ; as, for instance, when an individual is seized by an inflammatory affection of the air passages ; he first expectorates a thin mucous fluid, next some shreds of coagulable lymph, and lastly pus. There is a study which might prove exceedingly useful, namely, the chemistry of the living body ; by it we might be enabled to detect minute changes in the qualities of secreted fluids, and connect them with the structural conditions from which they apparently proceeded.

The *second* immediate effect of inflammation is

ULCERATION.

Ulceration is a breach of the continuity of a part through absorption. All the arteries of the body may be said to be employed in furnishing supplies to different organs, and the superfluity is removed by the absorbents. We have many familiar examples of absorption in morbid affections. One may suffice for the purpose of illustration. A man receives a blow on the face, and that appearance is produced which is commonly called a black eye ; the blood effused by the blow is gradually, and at last completely, taken away by the absorbents. You will most frequently find ulceration occurring in weak habits, and in those parts of the body which have a low degree of organization. Some parts, especially arteries, resist ulceration remarkably.

The *third* immediate effect of inflammation is

GRANULATION.

Granulation is a regeneration of a part of the body by an effusion and organization of lymph. It frequently happens that the substance which is reproduced resembles the natural structure of the part which has been injured, but this is not always the case. The restoration of injured parts by granulation is sometimes very extraordinary indeed. The CARDINAL DE RETZ mentions, in his Memoirs, that he saw a man in Spain who had two legs, but that you will say was nothing marvellous ; yet in this particular

case the two legs, or rather one of them, was most marvellous, for the Cardinal conversed with persons who affirmed that they knew the man previously when he had only one leg. How do you suppose that this large regeneration had taken place? Why, simply by anointing the stump with holy oil! Now-a-days, however, some parts of the body are not to be regenerated even by holy oil, which has lost its efficacy since the time of the Cardinal. Muscle is not reproduced, neither is cartilage, as CELSUS has remarked. But a very learned empiric, travelling about the country, once met with a man who had a black spot on the end of his nose, he persuaded him to have it removed. It was removed accordingly, but a hole remained in its stead; his superior art not reproducing the destroyed cartilage, although he had before promised that he could make flesh grow like grass!

Granulation is merely the organization of the lymph which has been effused; and by this alternate effusion and organization the part becomes regenerated in points somewhat like grains, and hence the distinctive expression. The above is what takes place in regard to the vascular system, but the probability is, that the nerves are also regenerated from the high sensibility which the part renewed acquires. The secretion diminishes, the skin contracts like a purse, and granulation ends by cicatrization or the formation of something like skin, if not skin itself. In the surgical treatment of wounds, we imitate or assist this process of nature, by using bandages, through which we cause granulating portions to contract, and at length heal.

The *fourth* immediate effect of inflammation is

MORTIFICATION;

which is separable into two stages; the stage of *gangrene*, and the stage of *sphacelus*. Gangrene is a threatened or forming mortification: it is an inflammation at the highest point in which the heat, circulation, and sensibility of the part remain; the skin is slightly purplish, and there are vesicles filled with a bloody fluid or with serum; yet, the heat, sensibility, and circulation

remain ; and these remaining, it is perfectly separable from *sphacelus*, which is the *complete death* of the inflamed part. Gangrene, however, is not necessarily followed by the death of the part ; the inflammation may become less, and terminate in effusion of adhesive matter, or by ulceration. It is by ulceration that a slough, a dead part, is separated from the living body. Frequently there is not much additional disturbance produced at the time the slough is forming, but when the slough is about to separate the demands made upon the powers of life appear to be so great, that a hard struggle ensues for life. A patient, for example, is worn out by a long fever ; he lies in bed on his back ; the part on which the pressure is most made becomes discoloured, then black, and at last completely dead ; the separation of the dead part by ulceration is accompanied sometimes by excessive disturbance ; but if he survive, the part is afterwards filled up by healthy granulation.

Sphacelus, on the contrary, is the complete death of a part. It is livid ; the heat, circulation, and sensibility are extinct ; the cuticle separates ; and there is the most offensive smell. The blood coagulates in the vessels of a sphacelated part, and, on examining them after death, you find lymph effused on their sides ; sometimes in the smaller vessels only, at other times in the larger vessels. But even before complete sphacelus occurs, the blood undergoes a change in its constitution, the red particles having a flocculent appearance.

Some parts are more disposed to resist mortification than others, as the internal organs, the heart, lungs, intestines. It is a very common thing for persons to say that a man died of mortification of his bowels, but that state rarely occurs there, the patient generally dying before the inflammation has reached that point. These are the principal immediate effects of inflammation ; but other local effects might be adduced, such as thickening or contracting of some parts, and hardness or softness of others.

If the œsophagus or urethra, the pylorus or rectum, be inflamed, thickening, and consequent contraction, of their calibre occur, commonly called strictures. When inflammation attacks the substance of the lungs, they often become hard, or what is

technically called hepatized, from an effusion of adhesive matter into their cellular connecting membrane; whereas, if inflammation attack the substance of the brain, it thereby often becomes remarkably softened, and, in like manner, the mucous membrane of the intestinal canal is often rendered pulpy by the same cause.

The next changes are:

THE REMOTE EFFECTS OF INFLAMMATION.

These are mainly to be sought for and will be found—1st. in the nervous system; 2d. in the sanguiferous system; and 3d. in the changes resulting from the combined disturbance of these two systems.

It is a very curious fact, that when a very small part of the body sustains a certain accumulation of blood in the capillary vessels, that accumulation, being continued, produces not only a change in the nerves of the part, but subsequently in the whole nervous system: which influencing the heart's action, the sanguiferous system becomes likewise disturbed. Thus, by an originally small and apparently slight disorder, first the whole nervous system, and secondly, the sanguiferous is brought into consent, and this fact we express by the term *sympathy;* the nervous system, like an electric chain of communication, connecting one part of the body with another. Next, then, a change supervenes in the distribution of the blood, and the secretions of different organs are palpably affected; the tongue is furred, the stools unnatural, and the urine turbid. The blood itself, in many cases, becomes altered, exhibiting, on abstraction, after it has coagulated, the buffy coat, an appearance connected with the degree of the animal heat, and therefore it is present in some inflammations and absent in others. But how are these two systems connected internally? They are not only connected with each other throughout the body, but more intimately so in all the noble organs, if I may be allowed to use such an expression. It is to the condition of these organs that we must look for the fatal effects produced in the progress of external inflammation.

During the course of all external inflammations which disturb

the heart's action, we should look to the internal pathology, to the state of the internal organs, which we shall find in one of two conditions; we shall find them either in the state of simple excitement, or the state of inflammation, terms which I have before explained. If the inflammation be external only, the blood circulates more rapidly through the whole body; and if no internal organ be pre-disposed to inflammation, the state of the internal organs is merely that of simple excitement. This is a point of great practical importance, in a surgical view, and one which ought to be well understood. But if a patient die after an operation, and survive the first shock, the cause of death will generally be found to be an inflammation of the internal organs, which arises during the progress of the subsequent fever. Surgeons, therefore, should pay the most minute attention to the state of these organs. and not confine it merely to the condition of the external parts. Indeed those individuals who do not know how to investigate and treat internal affections rightly can have no claim to be considered scientific surgeons. If any man be ignorant of the principles and practice of physic, he is, for the most part, quite imcompetent to decide upon the propriety of many operations; first, because he does not know how far the preventive efficacy of physic alone extends; secondly, because he cannot estimate either the condition of the internal organs, or the probable influence of an operation upon them; and thirdly, because when he does operate, he cannot properly conduct the after treatment, if any internal disorder should arise in the weak parts. It is all very well if the internal organs merely sustain a simple excitement, but let any one become inflamed, and especially the mucous membranes, and ten to one but he remains in ignorance of the existence of such inflammation. Pure surgery, therefore—surgery abstracted from physic—is a vampire, whose daily food is human blood. But in despite of the defective plans of surgical education, there are many accomplished surgeons, particularly in this metropolis. I would strongly recommend you to read the first Lecture of one, who resides in Edinburgh, Dr. JOHN THOMPSON, on the connexion between Physic and Surgery; it contains more useful matter, in a small compass,

than any thing which I have before seen on the subject. GIBBON has observed, that there are two modes of education, one which we receive from others, and another which we communicate to ourselves. There have been, and are, men who have broken through the trammels of scholastic and collegiate authority; who have struck out a new path for themselves; and I advise you also, in all cases, to exercise your own judgments, and step beyond that superficial system of education which is sanctioned by some colleges of surgeons, where examinations are held almost entirely without a reference to physic, as if the external parts had no connexion with the internal parts of the body.

The remote effects of inflammation are, first, to be found in the nervous system; secondly, in the sanguiferous; and thirdly, in the combined effects arising from the disturbance of both systems. As an example of the last, I might adduce the prostration of muscular power. The respiration is at last much impeded, partly, no doubt, through the eighth pair of nerves; but the respiration becomes weakened in part, too, through the prostration of the whole muscular system. The parietes of the chest are not raised high enough; the diaphragm does not contract fully; the lungs, in a word, do not receive a sufficiency of vital air; the heart's action flags; the blood is accumulated on its right side, and not duly decarbonized, the veins returning the blood from the brain, as well as other parts of the body, become finally congested; and thus, between the lungs, brain, heart, and blood, death takes place, rather from the remote than the immediate effects of inflammation.

It is said, that bleeding, blistering, purging, and a spare diet, are to be employed for the removal of inflammation; but the treatment fitted to one case of inflammation is different from that fitted to another. There are, in truth, various circumstances which modify the treatment: the *structures* attacked; the *degree* of inflammation; its duration also; the *remote causes*, common and peculiar; the *age*, *sex*, and *habits* of the parties, all demand a deliberate consideration.

LECTURE VII.

When inflammation arises from the exciting causes before named, viz. common depressants, stimulants, irritants, and interruptants; and when that inflammation is accompanied by a hot skin, and a quick pulse, I call this combination *common inflammatory fever*, whatever may be the part attacked by inflammation, since that circumstance does not change its nature, as it is still essentially made up of inflammation and fever. When all the functions are performed in a healthy state of the body, the study of these is called *physiology;* while the study of those deviations called symptoms, with their structural concomitants, is termed *pathology*. The cause of the proper performance of the functions of the body is the healthy condition of the solids and fluids, and the cause of the symptoms is to be sought for in some morbid condition, either of the solids or fluids. If we were to begin, as the French have done, with the inflammations of similar structures, it might appear at first sight a very plausible, and even useful arrangement; but there are so many structures of the same kind remote from each other, and some of a different kind adjacent to each other, that I shall follow another method, beginning with inflammations seated in certain regions, though in different structures, since that method will enable you to take more clear and correct views of the diagnosis of such affections. As the subject might be considered a sort of circle, I shall commence with *acute and subacute inflammation* of the *brain and its membranes*, and afterwards pass on to other quarters.

In the investigation of all acute and subacute inflammations you must attend to the combinations of symptoms, and not trust to any one singly. The study of physic is a very dull and dry one in the lecture-room; as far as the symptomatical and anatomical pathology is concerned; but it is most intensely interesting at the bed-side of the sick, for there the fate of the patient is mixed up with the feelings of his friends, whose happiness as well as his life are dependent on your judgment. You should, therefore, follow physic with all your heart and soul; you should give

your attention exclusively to it as an art and science, and especially mark the phenomena of maladies, and the effects of remedies, at the bed-side of the sick. Newton has said that genius is the habit of patient observation: and I believe that one man is distinguished above another in the practice of physic, more by his greater attention than any thing else. With respect to myself I could say, on examining any patient, whether this or that internal organ was or was not inflamed. If you were to demand how I have acquired this precision of opinion, I would say not by any species of witchcraft certainly, but by downright hard labour, by close observation of the sick upwards of twenty years. If we examine minutely, and note down the symptoms during life; and if we connect with these the morbid appearances displayed after death, we shall ultimately acquire such a tact in the discrimination of affections as would surprise ourselves, if we could forget the laborious and slow process by which we had attained such a species of knowledge.

Though you know that I have a predilection for the great toe, as it is sometimes the seat and cause of fever, especially as it has been so sadly neglected by some writers, yet I shall waive all partiality, and without further circumlocution commence with.

INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

With respect to the *symptoms* indicating inflammation of the brain, if it be either acute or sub-acute, there will be first, *pain in the head*, more severe in the acute than in the sub-acute inflammation. The pain, too, is generally more urgent when the membranes of the brain are inflamed, than when its substance is so affected. It sometimes, however, happens, that pain is absent in inflammation of the brain; the patient complaining of tightness, fulness, and throbbing, but without pain. Yet, most frequently, when the patient does not complain of pain while at rest, it can be excited by his shaking his head. When, therefore, you have any reason to suspect that inflammation is going on there, you should always desire him to shake the head; if inflammation be present, he will move it very carefully; but if not, he will give it, as is commonly said, a hearty shake. The pain

in the head is aggravated by the erect position; it is also increased during the night, for there is then a higher degree of fever; the pulse being quicker and the skin hotter than in the day. There is one circumstance which very much influences the pain in the head, it is co-existent with the inflammatory affection of the bronchial membrane, which preventing the due decarbonization of the blood in the lungs, a darker blood than natural then circulates through the arteries of the brain, and operates on it as a direct narcotic. Under such circumstances, although an inflammation may be going on at the same time in the brain, yet the patient will not complain of pain.

As pain, then, is sometimes absent, I must once more repeat, that you ought never solely to rely upon a single symptom, but take into account the combination of symptoms, and you will seldom fail in detecting the inflammation.

Inflammation of the brain has *two stages* where it exists without a bronchial affection. The first is that in which the sensibility is increased; the body being more susceptible than natural of the influence of ordinary stimulants; the second stage is that in which the sensibility is diminished; the body being more torpid than natural.

A *second* circumstance to attend to in inflammation of the brain is the state of the *external senses;* especially *the sight*, *hearing*, and *touch*. I am so convinced of the importance of attending to such points as these, that I think I should at any time be aware of the existence of an acute or sub-acute inflammation in the brain, by looking a person full in the face. The *eye*, in particular, has a very peculiar appearance: if you were to analyze minutely in what this change consisted, you would discover several alterations. 1. There is a dropping of the upper eyelid; it hangs lower down, covers in fact a larger portion of the globe than natural. 2. In almost all cases of acute inflammation of the brain, there is more or less intolerance of light in the first stage, and the patient occasionally knits his brows. 3. The *conjunctiva* is almost invariably streaked with red. 4. The *cornea* is more glassy than natural. 5. The pupil in the first stage is more contracted than natural, or it alternately dilates

and contracts with great rapidity: whereas, is the second stage, the pupil is dilated, and at last becomes immovable. The natural relation which the pupil bears to the size of the cornea has been said to be as one to three; therefore we may judge when the pupil is dilated or contracted. There is yet another thing with respect to the eye, though it be generally intolerant of light in the first stage, it is not so in the last, when there is usually some degree of squint.

The *hearing* in many cases of inflammation of the brain or membrane is much disordered. In the first stage it is often preternaturally acute; the patient complaining very much if persons walk across the room, or if a carriage pass along the street. In some cases, however, the hearing is dull; this has been supposed to depend on the state of the nerves of the internal ear from some pressure made at their origin; but I believe that, in the majority of cases, it arises from an increased secretion of the mucous membrane of the internal ear; at least in many of such cases, on examination of the internal ear after death, by breaking down the petrous portion of the temporal bone, a copious collection of mucus is there found.

Another of the series which you should attend to is, the *touch*, in the first stage of inflammation of the brain, or its membranes. If you be called to a patient lying in a state of apparent torpor, and if, when you touch him, he starts, you may suspect that he labours under inflammation of the brain, and should make further inquiries at once. A preternaturally acute sense of touch, with heaviness like sleep, frequently attends this affection, particularly in children. There is generally a very remarkable difference in the state of the nervous system in inflammation and in congestion of the brain. In congestion of the brain there is torpor, or a diminution of sensibility and contractility; but in the first stage of inflammation of the brain there is a state of mobility, by which I mean an excess of the sensibility and contractility. The torpor which is produced in the advanced stage of inflammation of the brain appears to be owing to a congestion of the vessels, in which the arterial blood assumes very much the venous character.

The above are the three principal points to attend to, as far as the external senses are concerned. But you must attend also to the state of the intellectual faculties ; these are distinct in health, but some of them become disturbed when inflammation of the brain, or its membranes, takes place. There is in the eye that appearance of physical brightness before mentioned, but mostly mixed up with a peculiar expression of intellectual dulness. Only one exception exists to this combination, as far as I know, that is, when high delirium is present, for then the expression of the eye is wild and wandering. Delirium, in this climate, does not take place in general till the second, third, or fourth day of the attack, even of acute inflammation of the brain, or its membranes, and later in the subacute form. It is set down in medical books, that delirium is the first symptom which occurs ; but it is not so, I repeat, in our country, though not uncommon in tropical climates. From this remark, however, I might except individuals who have been in the habit of drinking largely of wine, ardent spirits, or strong malt liquors ; for in these delirium frequently occurs much earlier in the attack of inflammation, than in temperate individuals. When delirium does not exist, there is often a degree of occasional incoherency of mind, which has been termed "reverie." For instance, you may walk up to the bed-side of a patient, and you may hear him muttering to himself ; you rouse his attention by asking him a question, and he will answer you with precision ; but being left alone, he soon relapses into the former state, and you may again hear him talking as if to himself, or to some of his friends.

This is the least dangerous species of delirium ; the next, is that kind of delirium which comes on just before the patient falls asleep, or just as he awakes from sleep ; or if the delirium should occur only during the night, when there is an increase of fever, it is not to be considered dangerous. It is dangerous, however, if it occur hour after hour through the night and through the day. Delirium is frequently kept up by anxiety of mind, and therefore you should be very careful in trying to remove anxiety of mind, if any exist, at an early period. A poor woman was brought into the Fever Hospital, who was obliged to

be separated from her child; she was talking, as she supposed, continually to it, and at last gathered up the bed-clothes, and fondled them in the most affectionate manner. It appears that during this kind of delirium the most predominant feeling is displayed; this was particularly apparent in a justice's clerk, who during the progress of the delirium was continually engaged in swearing in witnesses one after another, very rapidly; and he invariably concluded by saying, "So help you, God; kiss the book; give me a shilling." I remember the case of an old man, who was very fond of money, and he was employed during the delirium, as he imagined, in counting his money, and placing it in secure places, and at last he attempted to arrange pieces of old paper, as if they had been bank notes.

The *sleep* in inflammation of the brain is very much disturbed; in the first stage the patient is generally watchful and restless, particularly through the night; if he sleep at all it is mostly during the day. But in some cases the patient is very sleepy even from the commencement, particularly if the substance of the brain be inflamed, or if a severe bronchial affection be present. Watchfulness most frequently attends inflammation of the membranes, and heaviness inflammation of the brain itself.

These are the more *direct* indications of inflammation of the brain; but there are other indications which are more *indirect*. 1. The condition of the *circulation;* the pulse is usually greater in its volume, and also increased in frequency. The pulse sometimes undergoes very striking changes in the inflammation of the brain, or its membranes; during the whole of the first stage it is quicker than natural; it afterwards sometimes falls as many as twenty or thirty strokes in a minute, or becomes softer, and even slower than natural, but it generally grows again very quick before death. Look, however, to the other symptoms, and do not found your opinion, or give your prognosis that the patient is getting better from the state of the pulse alone; but look, I say, always to the combination of symptoms.

The state of the carotid arteries also is worthy of notice; these arteries *appear* to act more violently than the other arteries of the body, but the number of pulsations in them is exactly the same;

they are merely more distended than natural with blood, from the two causes which I before explained. You may draw more blood from the temporal artery while inflammation is going on in the brain, than you can at any other time, if the fever be fully developed. 2. The state of the animal heat is the next indirect indication. It is, for the most part, higher than natural, over the whole surface of the body; but the scalp, face, and neck, are sensibly hotter than the rest. The integuments of the chest are of a higher degree of heat than the integuments of other parts of the body, when the pleura costalis is acutely inflamed. 3. The *state of the respiration* is another indirect indication. There is a natural relation between the number of pulsations of the heart and the number of respirations. Supposing the number of pulsations to be about 70, the number of respirations would be about 18. But this relation is changed during inflammation of the brain; the breathing being more rapid in the first stage, and slower in the second. There is another circumstance connected with the respiration which ought never to be forgotten; namely, an occasional deep-drawn sigh. If you stand long over the bed of a person labouring under inflammation of the brain, or its membranes, you will find that he takes every now and then a deep-drawn sigh; and in that case you should never pass on, but pause, and thoroughly investigate all particulars.

There is one modification of inflammation of the brain itself, in which the patient becomes remarkably torpid. You are called, say to a patient; he appears as if asleep, but occasionally he makes a deep-drawn sigh; you put your hand upon the integuments of the head, and you find that they are a little hotter than natural. You examine the pulse, and are impressed that it is scarcely quicker than natural; yet there is a mental and bodily oppression about the patient, not at all proportioned to the slight apparent degree of fever. These are the most dangerous cases, many patients thus gradually sinking, till at last they become insensible, and expire, as if in apoplexy. This modification is an inflammation of the very substance of the brain, which rapidly terminates in effusion about the base, or into the ventricles of the brain. The *fourth* indirect indication is that which is afforded

by the *state of the stomrch and bowels.* In the first stage of inflammation of the brain the patient often has nausea, retching, or vomiting; in many cases this is the first symptom, especially in children, or where inflammation follows an internal injury. The bowels are generally torpid in the first, and throughout the greatest part of the second, but in the latter part of the second stage, the torpor commonly gives way. The tongue is furred, and rough, and moist. The tongue is generally moist in fever arising from common causes, whereas it is generally glazed and dry in the progress, or towards the end of a fever arising from a peculiar cause. The *fifth* indirect indication is the state of the *muscular system.* It is more prostrate than natural. The patient does not feel the loss of strength whilst lying in bed, but if you desire him to get up and walk, he staggers almost like a man intoxicated. There are exceptions, however, to this state in some cases, in which the muscular power is increased to a high degree, and the patient has an almost gigantic strength during the first stage; but in the second, the muscular power is very much relaxed; the deglutition becomes difficult; the patient lies on his back, and he sinks down deeper and deeper into the bed. Now, I think, if you attend to all the circumstances enumerated, you will at all times be able to distinguish inflammation of the brain.

But, by way of being more distinct, I shall repeat the leading symptoms in each stage. In the first stage they are the following: 1. Pain or aching in the head, increased upon motion; there are, recollect, some exceptions to this, but they are rare. 2. Glassiness of the cornea and a streakiness of the conjunctiva. 3. More or less dropping of the upper eyelid. 4. Contracted or variable state of the pupil. 5. Intolerance of light, noise, or touch; these are sometimes combined, at other times separate. 6. Inaptitude, confusion, heaviness, watchfulness, restlessness, reverie, or delirium. 7. An expression in the eye of mental oppression, with a physical brightness. 8. A preternatural throbbing of the carotid arteries. 9. Heat higher about the hairy scalp, face, and neck, than in other parts of the surface of the body. 10. The stomach irritable, and the bowels torpid. 11. More or less restlessness, technically termed jactitation. These are the combined signs

which, generally speaking, indicate the presence of the first stage of inflammation of the brain. In the *first stage* the heat is higher and the pulse is quicker than natural; the sensibility of the body is increased. But in the *second stage*, in which the sensibility is diminished, the following indications will be found:—1. The patient complains less of uneasiness in the head. 2. The pupils are more dilated than natural in the early part of the second stage, and are immovable in the latter part of it, so that they do not contract upon the application of a strong light. 3. The patient has either a vacant stare or a squint, his pupil not turning, not corresponding to yours in conversation. 4. There is indifference, stupor, and at last insensibility. 5. The pulse, although quicker in the first stage, now becomes sometimes slower, and, before the termination of the case fatally, again becomes quick. 6. The deep-drawn sigh occurs more frequently in the second than in the first stage, and is then accompanied by a moaning or crying. 7. The stomach ceases to be irritable. 8. The muscular power is very much diminished, the patient lying in a more sunk position on his back, with starting of the tendons, and at last relaxation of the sphincter muscles. Before this, however, the patient has generally a mumbling way of speaking; he does not speak distinctly, or he has a gluting noise in deglutition.

Before concluding this Lecture I may notice, that it often happens, and it is a very bad symptom, that during the continuance of this affection, the patient does not pass his urine, and suffers excessively from the irritation consequent on its retention. Therefore if you are called to a patient, and you find him lying on his back and moaning incessantly, always make a point of putting your hand on the abdomen, directly above the pubis, and feel whether the bladder be distended; if it be so, you must immediately introduce a catheter and draw off the water. If you find distension above the pubis, and if the linen of the patient be at all wet from the dribbling of the urine, you may depend upon it that the introduction of the catheter is necessary; an instrument which you should learn to use with dexterity.

LECTURE VIII.

In my last Lecture I described the direct and indirect indications of inflammation of the brain and its membranes, as it occurred in the *adult;* and in this I shall describe the symptoms of inflammation of those parts as they appear in *infancy* and *childhood*, together with the morbid anatomy of phrenitis.

Some peculiarities exist in early life, which render a separate illustration necessary, and I would rather be deemed tedious by repetitions, than run the risk of being misunderstood on a subject of so much importance. Investigation of the affections of infants must be conducted very much in the same way as those of the lower animals. In both instances the difficulty of diagnosis is increased, from their not being able to express their feelings and wants through language; and we have to judge, therefore, mainly from the appearances which are presented.

By the term *infancy*, I mean that period before speech commences; and by that of *childhood*, the period of life after the commencement of speech till the approach of puberty. In infancy, the first point to be considered is the anatomical physiology, or the observance of the different functions in the various structures of the healthy body; the second point is to contrast the existing symptoms with those functions; and the third point is, in fatal cases, to examine the body minutely, that we may discover the pathological cause or condition on which the symptoms depend. If we pursue, with becoming care, this threefold method, we shall be enabled to arrive at as correct an opinion respecting the nature of the affections of infancy as we could in those of adults. When we consider the sacredness of life, and how closely and tenderly the feelings and the happiness of parents are entwined with the health of their offspring, we should never cease to pay the most devoted attention to the disorders of infancy.

Before speaking of the symptoms, a few words may be said on the predisposing and exciting causes of

INFLAMMATION OF THE BRAIN.

Five points should be particularly noticed, as being peculiar to

infancy and childhood. 1. The greater delicacy in the structure of the body, particularly of the skin and internal mucous membranes. 2. The greater sensibility and contractility, in consequence of which all stimulants and irritants act more powerfully. 3. The local irritation of dentition. 4. The greater size of the head in proportion to that of the body. 5. The less power in infancy of preserving the animal heat, and therefore the effects of depressants are greater than in adults. Too much or too little clothing is prejudicial, the one by rendering the body more easily influenced by cold, as a depressant; the other, by accumulating too much animal heat, and thus acting as a stimulant. Both these causes are liable, the first indirectly, and the second directly, to produce such an excitement in children as may terminate in inflammation of the brain. It is of much consequence to give tone to the skin by cold bathing, or by at first using a tepid bath, gradually lowered to 60°. It is a practice which should be generally observed in the management of children, for through it the suface nearly maintains the same quantity of blood under a low or variable temperature, and hence the central parts are saved from turgescence.

Irritants also produce a greater effect on the infantile body. The irritation of dentition, which is local in the first instance, often operates on the whole nervous system, so that excitement is produced which may lead to internal inflammation in the parts weak or predisposed. Heat, as I noticed before, is, when locally applied, an irritant, and so is cold. Irritation may be excited by them, and lead to similar results. A blister applied to the skin of an infant may produce fever on the same principle; even the simple operation of vaccination sometimes produces fever, especially if the infant be out of health at the time; and therefore, whenever you attempt to perform vaccination on an infant, see that all the various functions of the body are healthfully performed, by which you may infer the sound condition of all the structures. No disturbance of the health can exist unless there be a morbid state of one or more parts of the body. *General disturbance* is a very desultory and dangerous term.

Before you perform any operation on an infant, you should remove the disordered state of the particular part or parts, for on

that the general disturbance of the health will depend. The operation for the hare lip frequently proves fatal, from inattention to this circumstance, in children: never perform that operation at a very early age, and at no period unless the child be in perfect health; for the sensibility and contractility are so much increased when the health is disturbed, that fever is easily excited, and then the brain and mucous membranes are remarkably prone to inflammation. Irritation, again, may be produced by acid drinks and indigestible food acting on the lining of the stomach or intestines; and that irritation affecting the whole nervous system, the heart's action becomes quickened, the animal heat augmented on the skin, and inflammation of the brain may arise in the course of the fever. The drastic purgatives, which are too frequently prescribed, often create considerable irritation on the mucous membranes of the intestines. But the larger intestines sometimes become torpid, have not sufficient sensibility and contractility daily to deliver fully their contents, so that a large fæcal accumulation takes place in the colon, operating as an irritant; but probably some of it becomes absorbed, for the breath and the secretion of the skin are sometimes very much tainted with a fæcal odour, and therefore we might infer that even the blood itself was affected. The irritation may be, and frequently is, in the liver, or it may be in the bladder; if the urine be turbid, or retained in the bladder, it becomes an irritant, and operates on the whole of the nervous system in the way which I have before so often explained. The irritation may commence in the bronchial lining, a very common cause of leading to inflammation in the brain in infancy and childhood; for it gives rise not only to excitement, but to difficulty of breathing, both of which are apt to operate on the brain.

If you stand by a child when he coughs, and if you put your hand on the pulse, immediately after coughing, you will find that the heart's action will be increased ten or twenty strokes for a short time, augmenting the excitement every now and then. Besides, from the difficulty in transmitting the blood from the right side of the heart through the lungs, the large veins become congested, and afford some mechanical impediment to the return of the blood from the head. The bronchial affection, too, operates

in another way on the brain; there is some alteration in the quality of the blood, it is not decarbonized or oxygenated, and a blacker blood than natural at last circulates through the brain, and tends to oppress that organ almost like an opiate. Irritation, in a word, may arise in any part of the body either internally or externally, especially in infancy and childhood, and finally lead to inflammation of the brain in the manner already illustrated.

Interruptants may be considered as a cause of inflammation of the brain. The interruption before mentioned, from the bronchial affection, might have been dwelt upon as a most direct instance; and some think that enlarged glands in the course of the veins may also be another direct cause. A more indirect one, probably, sometimes occurs from congestion of the liver, which at last leading to hepatic or intestinal irritation, fever is the consequence; and inflammation of the brain or its membranes may occur. Were it not for the sympathy existing between the nervous and vascular systems, how could we account for an irritation set up in a distant part of the body acting on the brain? The pulse, during the first year, is somewhere about 120, in the second 110, or a little lower, and in the third year 100, or a little lower. If you find that the pulse is quicker at these periods, and the heat of the surface higher than natural, you should be very careful in examining whether the brain or any other part be inflamed.

Nature, however, appears to have made certain provisions which appear to diminish the tendency to inflammation of the brain, both in children and adults, but especially in the former, as its size and vascularity are greater. I might instance—1st, The flexures of the carotid and vertebral arteries. 2d. The delicate mesh-work and dippings of the pia mater, which, receiving the blood before it enters the brain, and transmitting it thence in minute vessels, must contribute to diminish the force with which the blood is sent to the brain. 3d. The collision of currents, as it were, which exists through the circle of Willis, tends also to lessen the impetus of the blood transmitted to the brain. If we look at the venous circulation of the brain, we see similar provisions made against congestion, in the situation, structure, and free communication of the sinusses, and likewise in the remarkable

dilatation in one portion of the internal jugular vein. The brain of infants is much softer than the brain of adults, and in some respects bears more than the brain of adults. The brain of infants, for example, is frequently compressed so much during labour as to undergo then a striking change in its form. Blows, causing depression of the skull on the brain, are borne with less injury to its functions than in the brain of an adult.

The causes which I have named, as exciting inflammation of the brain in children, are applicable also to inflammation of the brain in adults; there are, you will recollect, common despressants, stimulants, irritants, and interruptants. But mental emotions, and the use of alcohol, are much concerned in the production of the cerebral affections of adults.

It ought, however, to have been mentioned before, that the tendency to this affection runs very often, in particular families, hereditarily. Whenever this is remarked, the reigmenal management should be most assiduously conducted.

With respct to infants, I would say that, as far as prevention of the inflammation of the brain is concerned, there are four points to be attended to in particular. 1st. The *diet* is very important in infancy. Take care not to offend the stomach by any indigestible food, or acid drinks. I am perfectly convinced that many cases of inflammation of the mucous membranes of the stomach, bowels, and subsequently of the brain have been produced by these causes.

The *diet*, during dentition, should be most attentively regulated. For the first nine months, the mother's milk is the best; and, about the period of weaning, the diet should be thin, and gradually thickened afterwards. If the bowels be kept open, if there be a copious flow of saliva, and if the diet be rightly managed, the process of dentition will seldom produce any mischief. If, however, the gums should become red, swollen, and tense, and particularly if any degree of fever be present, they should be freely scarified; the lancet, in short, ought to grate against the teeth beneath. A crucial incision is the best for removing tension.

The 2d point to attend to, is the *state of the skin*. The skin is

sometimes disordered either from inattention to cleanliness, or proper clothing. As the skin sympathises with the internal mucous membranes, its healthy functions should be preserved by strict attention to cleanliness, and light warm clothing, with sponging, or the bath as before recommended.

The 3d point is *exercise*. You will never find children healthy unless they have plenty of exercise regularly in the open air. Children never look well in London who are shut up in close crowded courts and alleys. But you may keep the health of children as good in London as in the country if you attend to their diet, clothing, exercise, and sleep. Children are commonly sent to school at too early an age, to keep them out of harm's way, as it is said. They are confined throughout the greatest part of the day on forms, in a close warm room, and what is the consequence? Their health suffers materially, they have not the usual flow of spirits or the energy of muscle which distinguish children who are differently treated. Again, in the manufacturing districts of this country the health of children is ruined by placing them in heated apartments or badly ventilated ones, where, being confined many hours every day, they soon acquire a sickly aspect. They are, too often, made slaves, to gratify the sensual appetites of their mercenary parents or task-masters. There are some very improper customs prevalent in large towns, one is keeping children up late at night, which leads me to observe, that the 4th point in the management of infancy and childhood, is to attend to *sleep*. For the first three or four years a child never ought to be allowed to remain up after seven o'clock. If a child be kept up late he becomes fretful and uneasy; the whole nervous system is in a state of irritation, and the vascular soon afterwards becomes excited. If an infant or a child sleep badly, you may be sure that all as not right. Those infants or children who naturally are restless at night, are the most prone to affections of the head. In choosing a nurse, be sure that she has good sense and good nature, both of which are necessary in the nursery, where many little, though important, things arise constantly to require the exercise either of the one or the other. It is very imprudent to place children under the care of a cross-grained, ill-tempered

nurse. God knows their troubles come soon enough in after life, and when young, their health requires that they should be made as happy as possible, for if their tempers be broken, the brain and other important parts are liable to be disordered. Having made these remarks, I shall now call your attention to

THE SYMPTOMS OF INFLAMMATION OF THE BRAIN IN CHILDREN.

These will be easily recognised by a man who is a minute observer of Nature; but never by a superficial observer, or by one whose head is burthened by black-lettered books. In the investigation of the inflammation of the brain, or its membranes attend to the following points in infancy and childhood. 1. The state of the *external senses*. The upper eye-lid, for example, when the brain is acutely or subacutely inflamed, drops down, covering a larger portion of the globe of the eye than natural; the lucid cornea is more glassy or glairy than natural, and the conjunctiva generally more streaked or ferretty. The pupils are more contracted, or alternately dilate and contract with great rapidity, in the first stage. There is also in the eyes a mixed expression of intellectual dulness and of physical brightness. This appearance is so peculiar that I think I could at any time detect the presence of inflammation by it. Those persons who are much with children often notice minute changes in their countenances with great accuracy, and whenever you hear a mother say that there is something odd about the expression of her child's countenance, never disregard it, but make the most minute inquiries into the case. If the above expression exist, and if, while you stand about the cradle or cot, you hear every now and then a deep-drawn sigh, you may suspect that inflammation of the brain has taken place. In the first stage there is, mostly, intolerance of light evinced, and the hearing and touch are then preternaturally acute. You see a child lying in his cradle, or crib, you walk up to it hastily, so as to make a noise, or scratch the cradle, and he starts, as if he were alarmed, although the noise be but slight. The child is also fretful at this period, and cries on being touched. There is, generally, however, a combination of fretfulness and heaviness in young children.

2. The state of the intellectual faculties. A child displays considerable developement of intellect within the first three months after birth. The child knows not only how to express its wants in a few days, but when they are satisfied. It cries, for instance, in the absence of the nurse, but is pacified immediately she touches it with her hands, assured, from experience, that a supply of food will follow. Many other examples of a similar kind might he adduced. When the inflammation is going on in the substance of the brain, the intellect is soon and remarkably obscured; but when it is going on in the membranes only, the intellect is not so soon and remarkably disordered. In the former case, you find a child lying in bed, and the dulness of the countenance is particularly striking with the general oppression. The child grows gradually worse, the dulness becomes indifference, the indifference becomes stupor; the stupor becomes complete insensibility, and he dies speedily from effusion, unless promptly and properly managed.

The 3rd point to attend to is the *sleep*. In the first stage, the child, perhaps, falls asleep at some unusual hour; the breathing unequal then, sometimes quick, sometimes slow; a hectic-like flush momentarily passes over the cheek, which as rapidly becomes unusually pale. But one of the most certain signs is, awaking out of sleep with a start, attended by an alarmed expression, sometimes with screaming, and a damp skin.

4. The stomach is irritable, or the bowels torpid. Inflammation of the brain is more frequently ushered in by retching and vomiting in children than adults. Be on your guard, therefore, whenever sickness occurs, and be sure to trace it to its true cause, whether it arise from the brain, stomach, liver, or bowels; if it arise from inflammation in any of these quarters, it is vain to give effervescing draughts; you must remove it by removing its cause, which will be discovered by marking the combined symptoms. The stomach is less irritable when a bronchial affection co-exists, probably because the sensibility is then lessened by the state of the blood.

5. The pulse is always quicker in the first stage of inflammation of the brain; often, but not always, slower in the second stage;

and again it becomes quick a little before death. The carotid arteries throb preternaturally in inflammation of the brain, as is evident if you expose the neck of the child in the first stage.

6. The heat of the head is always higher than other parts during the first stage.

The 7th circumstance to attend to in the first stage is, the respiration; it is quicker in the first stage, and becomes slower in the second; but the most characteristic symptom is, the occasional deep-drawn sigh in both stages.

8. The muscular system. The infant is restless in the first stage; he puts his hand often to his head, or claws with his fingers; or the fingers are drawn toward the palm; sometimes infants cling to the nurse unnaturally, evincing, as it were, a fear of falling. The child cannot hold up its head long, it lays it on the nurse's breast or on the pillow. In sleep it often bends it backwards much.

9. Speech. There is often a change in the pronunciation of certain letters in children affected by cerebral inflammation. My little boy had an attack. The first thing which attracted my attention was his not being able to pronounce the W as before. His skin became hot, his pulse quick, his eye bright, yet heavy, and convulsions rapidly supervened, a circumstance not uncommon in the most accute attacks of inflammation of the brain, occurring in such a full habit as his. He recovered by the means which shall be afterwards mentioned.

In the *second stage* you may notice the following effect:

1. Though in the first stage you may rouse the child, yet in the second he becomes more and more indifferent, and all those appearances present themselves which mark the diminished sensibility. The fontanelle frequently becomes raised then in an infant, which is a very dreadful symptom, when combined with indifference and stupor.

2. The eye also undergoes some change in the second stage; stratismus occurs, the pupil is more and more dilated, and at last immoveable.

3. There is often a slight paralysis of one of the upper eye-lids.

4. A peculiar swing or motion of one arm or leg of the child.

I was called a considerable distance to see a child. I heard that it had been convulsed, and I observed that when the hand was raised to the mouth, the palm was turned upward just as the tip of the fingers reached the spoon placed there with some liquid. From these and other circumstances, I was convinced that effusion had taken place. If you see the child turn the palm of the hand outwards and pass it from his mouth across the cheek, when he wishes to force away something from his mouth, you must regard it as an unfavourable symptom.

5. The breathing becomes slower than natural, and is accompanied not only by sighing, but a peevish cry.

6. In the beginning of the second stage the pulse frequently becomes slower, and quicker again before death, as before noticed.

7. The tendency to convulsions. Though sometimes the disease is ushered in by them, yet they more frequently occur in the second stage, when effusion has taken place.

From what has been said, then, you may perceive, that the best mode of ascertaining affections of the head in infancy, is first to consider what are indications of a healthy condition of the brain, and secondly to contrast the existing symptoms with them, that you may infer whether or not that organ be the seat of the disorder. In regard to the subject in question, it may be further observed, in summing up, that first, the external senses are connected with the brain, especially those of sight, hearing, and touch, and some or all of them are more or less remarkably affected. Secondly, the intellectual faculties are connected with the brain, and some of these too become disturbed; for if we investigate the character of the infant, we shall find some striking changes in its habits with respect to persons or things, or general conduct, so as to indicate some disturbance in the brain. Nay, the combination of heaviness and fretfulness, with the peculiar expression of the eyes are generally conclusive indications. 3dly, Sleep is connected with a certain state of the brain, so that when it is remarkably changed, we may suspect some mischief there, particularly if the infant awake in an agitated state, and have an alarmed expression afterwards, or if there be watchfulness or stupor with the other combined symptoms. The muscular

power is connected with the brain, and when an infant cannot hold up its head as usual, or when it bends it backwards preternaturally in sleep; when its utterance becomes any way strikingly changed; when the bladder retains its contents shorter or longer than natural; when it lifts its hands often to the head; when it claws with its fingers; when the thumb is bent inward so that the hand becomes conical; when the eyelids drop; when one eyelid is palsied, and when twitchings or convulsions occur; when there is more or less motion on one side than the other, something wrong may be inferred within the head. Fourthly, the respiration is connected with the brain, so that when it becomes quicker or slower, and when at the same time there is a deep-drawn sigh occasionally, the attention should always be turned to the brain particularly. Fifthly, the stomach and intestines are associated in their functions with the brain, and when the former is unusually irritable, or the latter unusually torpid in infants, the most minute investigation should be made, in order to ascertain whether that irritability or torpor be dependent on some cerebral disturbance. Sixthly, you will recollect the accumulated heat about the hairy scalp, the distension of the carotid arteries, and the changes of the pulse. Lastly, it should be remembered, that inflammation of the brain may commence as a primary affection, or that it may follow, as a secondary one, any remote irritation, external or internal; and as the brain often becomes very severely affected during the fever which attends such irritations, especially those seated in the bronchial and intestinal lining, so the medical attendant should make daily inquiries to satisfy himself as to the condition of the brain. The primary or secondary attack of inflammation of the brain in infants or children is open or insidious, and nothing but great discrimination can detect the latter in time to arrest its progress. You will, therefore, see the necessity of taking the deepest interest in the investigation of this affection in infancy and childhood.

Though the inflammation of the brain may be acute or subacute; though it may show itself openly, or it may steal on insidiously, yet the morbid anatomy is similar in both cases.

THE MORBID ANATOMY

Of inflammation of the brain in infants, children, and adults. The dura mater will often be found more adherent than natural, and sometimes participates in the vestiges of inflammation. The archnoid membrane is frequently opaque, milky, and thickened in parts; but I have never seen this appearance of the arachnoid, either in acute or subacute inflammation, in which the pia mater was not overloaded with blood. Generally some effusion of serum and lymph exists between the pia mater and arachnoid. The ventricles frequently contain much more fluid than is natural; and when that is the case, each choroid plexus has a blanched flabby appearance. Another circumstance, which you should recollect, is, that the ventricles are sometimes ruptured by removing the scull cap; and then the effusion, if any, escapes from the ventricle, a fact of which you should be aware in all examinations. Sometimes the ventricles are so distended that the convolutions of the brain are unfolded, the effusion, as it were, being confined in a bag before an opening be made. This expansion of the brain shows part of its anatomy, as GALL has so strikingly exemplified in his improved method of dissecting that complicated organ.

When the substance of the brain itself has been inflamed, and when a large effusion has not taken place, it presents, on cutting, a number of very minute bloody points; and sometimes, in protracted cases, some portion of it is found pulpy, a certain sign of previous inflammation. Occasionally tumours are found in the cerebrum or cerebellum, or substances resembling strumous tubercles, and sometimes hydatids are attached to the choroid plexus. Always extend your morbid examinations to all parts of the body. On inspecting the surface, sometimes you will find enlarged glands, especially about the neck, and internally too, as the bronchial and mesenteric glands. This most frequently occurs in children who had been sickly before the febrile attack. Very often the bronchial lining is found highly injected, also the mucous membrane of the ilium, the most common combination in examples of cerebral disorders in children.

LECTURE IX.

In the two last Lectures I enumerated the symptoms and described the morbid appearances of inflammation of the brain and its membranes, as it occurs in adults and in children. Having proceeded so far, it will now be necessary to explain the various causes or pathological conditions of that affection called water in the brain, or techinally, hydrocephalus internus.

HYDROCEPHALUS INTERNUS.

It has been said by many writers that Hydrocephalus Internus is a disease *sui generis;* but if my observations be correct, that opinion is erroneous. Hydrocephalus Internus is a sympton, or rather effect of some previous affection, and may almost invariably be traced to one of the three following :—

VENOUS CONGESTION.

In this condition of the brain, the patient has an universally cold skin, a feeble pulse, a weak respiration, great prostration of muscular power, and, in the worst forms, he is insensible also. If you examine the brain after death, no trace of inflammation can be found, but the venous apparatus there is more or less congested, and an effusion of the fluid exists in the ventricles of the brain. Many weak convalescents, some infants, and old people, die in this way, through the influence of depressants productive of congestion and effusion. I once saw the child of a medical friend of mine, who died in this manner. He became unnecessarily alarmed at a slight indisposition of the child, and applied several leeches to the temples. The evacuation of blood sunk the little patient into an extreme exhaustion, and, while in that condition, the skin being cold, and the pulse thready, the pupils became dilated, it began to squint, and, after its death, which shortly took place, a copious effusion of serum was found in the ventricles.

It occurs from

INFLAMMATION OF THE BRAIN,

or membranes, arising either from a common or a peculiar cause, it is only a variety of common inflammatory fever, the inflammation being merely seated in the brain, or its membranes. But inflammation of the brain, or its membranes, may also arise from peculiar cause, as, for instance, in the course of measles, small pox, scarlet fever, hooping-cough, and typhus, after the fatal termination of which, where the brain has been effected, this effusion occurs.

ORGANIC DISEASES.

In old persons, the ventricles are often deluged with a serous fluid, from the great obstruction at last offered to the circulation by organic tumours, or the like. MORGAGNI, who drew his inferences simply from the facts before him, has given a much more correct account of hydrocephalus than most modern authors; for he said, that it arises not from one cause, but from various causes. In this way it sometimes arises in children from tubercles, a specimen of which I showed in the last Lecture, and sometimes from hydatids, and even organic affections, an instance of which I saw not long since in the child of a professional friend. If, therefore, you accurately note the rise and progress of the symptoms, and examine the bodies of those who die of this affection, you will find hydrocephalus internus to have arisen either from congestion, inflammation, or an organic affection of the brain. In children, the bronchial and intestinal lining will often be found simultaneously affected, and sometimes the liver. In those who had been pale, or more or less emaciated before the attack of fever, the mesenteric, bronchial, and cervical glands are frequently diseased, and in such subjects a tubercular state of the lungs and other parts is not uncommon. But I do not believe that the enlargement of the glands, either in the neck or about the bronchia, are the cause of effusion into the ventricles by the mechanical pressure which they might be supposed to make on the veins; at least I have seen many cases in which these glands have attained a very large size, without producing any such effect. Generally speaking, in-

flammation of the brain, or its membranes, runs a more rapid course in adults than in very young children, if we except those cases in the latter which occur suddenly and severely, and which wind up rapidly by convulsions. The brains of young children seem capable, for the most part, of sustaining a longer excitement than those of adults under an acute or sub-acute inflammation; and this is the reason, perhaps, why we very frequently find, in most cases, less effusion in the brain and between the membranes in adult bodies, the inflammation having terminated at an earlier stage.

TREATMENT OF INFLAMMATION OF THE BRAIN.

The treatment of inflammation of the brain is the next consideration. In the present Lecture I shall advert to the treatment best suited to adult cases; and in my next, to that best suited to infantile ones. Inflammation of the brain occurring in the adult is, when combined with fever, either acute or sub-acute. In acute, the fever is higher and the local disturbance greater; it runs a much more rapid course, and is, therefore, more dangerous than the sub-acute, inasmuch as it affords less time for the operation of remedies. You will not forget, however, an exception to the above description, as far as the fever is concerned, for one form of acute inflammation occurs in the brain itself, in which neither the heart nor the pulse are remarkably affected, and in which the mental and bodily oppression are nevertheless so great as to be immediately alarming. When acute inflammation of the brain or membranes occurs, the legal maxim,—

"*Nullum tempus occurrit regi*,"

might be changed thus,—

"*Nullum tempus occurrit medico*;"

for time then is of inestimable value, if properly employed. But if, in such cases, hour after hour be lost in doubt and indecision, the patient assuredly is sacrificed. If I wished to inspire students with the highest confidence in the remedial powers of physic; I would take them, at the outset, to a series of cases connected with acute or sub-acute inflammation, which, rightly managed then,

would nearly always end favourably. If I wished to make a man a complete sceptic in physic, I would show him cases which had been neglected or maltreated in the commencement, for most of such, unhappily, would have an unfavourable termination. A Frenchman once observed, that the only difference which he knew between the English and French physicians was this; the English killed their patients by their heroic or active treatment, whereas the French allowed theirs to die by their expectant or inert treatment. If you trace the practice of most physicians, you will find that they are remarkably attached to some particular practice, which is pushed beyond the legitimate boundary. One is too partial to bleeding, another to purging, a third to bark, a fourth to blue pill, and so on; but the fact is, that if any man wish to practise with general success he must not be attached to one plan, but vary his treatment according to the circumstances of each particular case, for even if he possess correct general principles, still he must carefully take into account all the circumstances which modify the employment of remedies. His success will depend on the precision with which he detects these modifying circumstances, and the skill with which he adapts his measures to them and the existing affection. GALL thinks, that decision of character, or firmness, is connected with a peculiar formation of the head, especially, if I mistake not, about the crown. But I believe, that if a man's head were as taper at the top as a sugar-loaf, like the Macrocephali described by Hippocrates, that he would become decisive in his practise in acute inflammations, merely by witnessing the bad effects of a contrary method. It is the grand peculiarity of the human intellect, that it has the power of varying its determination as the occasions may require, and the cultivation of this power is of the highest utility to the medical practitioner. You will remember that I do not place the efficacy of the treatment entirely in the administration of medical means, but in the co-operation of medical, regimenial, and mental measures; the following of which are those upon which most reliance is to be placed in the removal of acute and sub-acute cerebral inflammation.

BLOOD-LETTING.

We can do, by blood-letting, in acute or sub-acute inflammations, in five minutes, what we could not do in five days by any other measure; therefore, in all such affections of the brain it is the principal remedy, the first, without which nothing effectual could be done. If the inflammation be acute or sub-acute; if the heat be high on the surface and the pulse expanded, or hard and contracted, then the patient is under the most favourable circumstances for blood-letting. No precise quantity of blood can be mentioned as necessary to be taken away for the removal of any kind of inflammation. We have not yet arrived at that mathematical accuracy which enables us to say, that ten, twenty, or any other determinate quantity, will suffice in inflammation of the brain or membranes. You must be guided by the effect produced, and not by the quantity drawn. Under the circumstances above named, you must bleed the patient to approaching syncope. If you bleed a patient to-day, with reference not to the effect but to the quantity, and bleed him again to the same extent to-morrow, yet if you do not make an impression on the heart's action, you do no good in cases of intense inflammation; nay, you do harm, because you weaken the patient, and leave the disorder unsubdued. In all cases, then, of acute inflammation, where the fever is freely developed, observe this rule—bleed the patient either till the pain be removed or till syncope approach, till, in fact, the pulse become a mere fluttering thread beneath the finger. The quantity requisite for this end is exceedingly varied in different patients. Once I attended two persons about the same time, one who laboured under inflammation of the lungs, the other under inflammation of the brain; in the former case, which occurred in a man of very extraordinary strength, about fifty ounces were necessary, whereas in the latter, about a table spoonful answered; the effect in each case was the same, namely, approaching syncope, and the subsequent removal of the inflammation. If you can produce approaching syncope by the abstraction of a small quantity of blood, so much the better, and the best way of accomplishing this is to bleed the patient while in the erect position, in which

syncope, or faintness, the soonest approaches. You have a very good example of the effect produced on the capillary vessels by bleeding, in the case of common acute inflammation of the eye; if you stop short before approaching syncope be produced, the conjunctiva remains as red as before the performance of the operation; but if you continue the abstraction of blood until the state just mentioned be produced, you will find that the conjunctiva will be perfectly blanched, the blood having then left the capillary vessels of that part. Frequently, one such bleeding as this will be sufficient to remove the inflammation, and thus the strength is saved by avoiding repeated venesection.—Strong men require a larger quantity of blood to be drawn than weak ones, generally speaking, to produce the same effect, and males generally more than females. But the rule by which you must be guided in all acute and sub-acute inflammations, where the fever is fully devoloped, and where a vital part is concerned, is that which I have mentioned before, and be sure to act upon it in such cases, for half measures are then mostly fatal. But whenever you have occasion to bleed in this decisive manner, always make a point of laying the patient quite flat before the fainting shall actually take place, and then there will be no danger from perfect syncope, if it should supervene. Bear this rule constantly in mind where you are compelled to abstract large quantities of blood. If the local disturbance should return with the fever after the first blood-letting, it will be necessary to repeat the operation in the same manner as before, particularly if the inflammation be acute; for the sub-acute form being much more protracted, there is less occasion for promptitude in the repetition of venesection than in the acute, which requires that much should be done in a short period. If a decided impression shall have been made by one, two, or three blood-lettings, as the case may demand, then the application of leeches to the temples often has an excellent effect in removing any residue of inflammation. But always recollect to combine the secondary with the principal means—the small arms with the artillery of physic.

The *second* means for the removal of inflammation of the brain or membranes, is the use of *purgatives*. The stomach is very ir-

ritable, and the bowels sometimes are very torpid, and when this is the case, you may be quite sure that you have not carried the bleeding sufficiently far, for the patient has frequent nausea, retching, or vomiting, and the bowels are not obedient to aperients. You must remove these conditions by decisive blood-letting, and not trust to effervescing draughts to relieve the stomach, nor to purgatives, however administered, to relieve the bowels in the first instance; but remove the remote inflammation, upon which these symptoms mainly depend. While, however, you are attempting this by blood-letting, you may often assist in allaying the irritability of the stomach, by unloading the colon, through large injections, which should not contain less than a pint and a half, or two pints, so as to distend the lower gut, and dislodge the accumulation of fæces, if any remain in the colon. If you put into this injection three or four drops of croton oil, it will have a very good effect, and I think that this is generally the best mode of exhibiting this medicine; for when given by the stomach it is apt to produce not only irritation of the mucous membrane of that organ, but also of the small intestines, an effect less remarkably produced on the same structure of the large intestines by this drug. When you have allayed the irritability of the stomach, and emptied the colon, then you may give purgative medicines. A combination of several is better than any of them singly exhibited; generally give three grains of *calomel*, with the same quantity of *jalap* and *rhubarb*, made into pills; and follow up this dose in two or three hours, with *castor oil*, or the following mixture, which I am frequently in the habit of using in these cases:

Infusion of Senna, ℥vi.
Sulphate of Magnesia, ʒvi.
Manna, ℥ij.
Carbonate of Magnesia, *gr. xii. or* ℈j.

Three table spoonfuls may be taken at first, and two table spoonfuls be repeated every two, three, or four hours, till the bowels be fully and frequently relieved. In all ardent fevers it is not an easy thing to get the bowels to act, unless you educe the intensity of

the heat by bleeding, ablutions, a cool apartment, and a spare diet. For some time past I have combined *colchicum* with purgatives, in the treatment of common inflammation of the brain, and some similar affections, with considerable success as an auxiliary to blood-letting. Usually I have given five or six grains of the powdered bulb, two, three, or four times, in twenty-four hours; but whenever nausea occurs from its use, be sure to withdraw it immediately, for if persisted in after that effect, it might produce dangerous relaxation of the whole body, with irritation of the stomach and intestines.

3d. *Regulation of temperature.* The head is considerably hotter than natural, and whenever you can get it shaved without producing much mental irritation or alarm, you should order it to be done; but do not generalize indiscriminately, and direct every person's head to be shaved; but make the proposition, if the patient be sensible, as if the shaving were for the purpose of ensuring a good crop of hair afterwards, or as if it were for the purpose of present comfort. But if the patient be agitated at the proposition, and resist it strongly, do not press it further; but then be content with thinning the hair. You should, while the head is preternaturally hot, apply a single piece of thin linen over the scalp, dipped in cold water. I don't like the mode of applying cold by bladders, filled with water or ice, because the weight is extremely objectionable. The use of æther and spirits of wine in evaporating lotions, I also dislike, because the vapour of them is sometimes drawn up the nostrils, and produces a stimulatory effect. Be careful that the animal heat is not too much accumulated over the whole surface, by loading the patient with bed clothes. When the animal heat on the surface is increased very much, it keeps up the action of the heart, and thus tends to maintain the inflammation. Let the patient be covered by a single sheet, and even in winter you will find that a quilt over that will be quite sufficient, as long as the skin shall continue hot and dry. Take care also to regulate the temperature of the room in which the patient lies, especially towards evening, and recollect the caution which I formerly gave you respecting the conduct of nurses in considering their own comfort. The feet are

frequently cold in inflammation of the brain, and then *sinapisms* applied there will be found useful. They may be made of equal parts of crumb of bread and mustard flour, mixed up with some warm vinegar, and should be applied to the feet for about a quarter or half an hour, or even longer, until a tingling warmth be produced, then they ought to be removed, and the feet wrapped in flannel.

The *fourth* mean in treatment, is the *elevation of the head and trunk.* By the laws of gravitation, in adopting this practice, you must diminish the flow of blood to the brain through the arteries, and materially assist the return of blood from the brain by the veins. This may be very easily done by having an inclined plane screwed upon the bedstead, and the bed laid upon that, or still more easily, by placing blocks of wood, 6, 8, or 10 inches high under the upper parts of the bedstead, a footboard being at the bottom.

The 5th point in the treatment is the abstraction of all mental and physical excitants, a term by which I mean irritants and stimulants. I am always very much concerned when called to patients having inflammation of the brain in any of the very noisy streets of London; if I can, with perfect safety, get them removed from such situations, I invariably do so as early as possible; but when I cannot get them removed, I place them in the quietest room in the house, because noise is a dreadful thing in the first stage of most cases. Let the business of the house be done with as little disturbance as may be; and if the patient be still affected by the noise in the street, lay straw down, and put cotton in the ears. Do these things, however, only where they are necessary; never make an unnecessary fuss for the sake of attracting attention; for if a man have merit, it will be discovered sooner or later, even if he should have ever so many enemies; and honest men will always despise every species of trickery, the trade of weak minds. Another circumstance is the management of light. Do not let the patient have white bed curtains, or white window curtains; but let a green blind be put over the window, and the light curtains, if such, be removed. I have known many patients fall into a tranquil sleep immediately

that this change was made. Light and noise are two very powerful irritants, and should therefore be invariably avoided. I recollect having been called to a young lady who laboured under inflammation of the brain, and it appeared to me on investigating the history of her case, that the irritation was kept up by the anxiety in which she saw her father and mother, who were alternately or together coming into the room through day and night, to see and inquire how she was going on. I said that it was not in the power of physic to do her any good if they continued to visit her in this manner, and that I could not be answerable for the consequences. At my request they left her for some time alone; she fell into a tranquil sleep, and recovered from that time. You must never sacrifice the conviction of what is right, on your part, to the feelings or intreaties of the friends, whose affection always prompts them continually to do what they consider an act of kindness; but which is often injurious, by depriving the patient of quietude and repose, which are essentially necessary in the treatment of such delicate cases.

6th. The *diet*. The regulation of this requires great firmness in most acute cases, as the public prejudice is in favour of cramming. When the ancient republic of Rome was in imminent danger, a dictator was elected, and endowed with supreme authority; and when the republic of the human body is in danger, the medical attendant must be an absolute dictator. This dictator, alias doctor, must direct, and see that others obey. As long as the skin shall continue very hot and dry in acute inflammations, accompanied by a full or a hard pulse, water will be not only the best drink, but the best diet too; but when the fever is fairly on the decline, a light nutritious diet may be allowed morning, noon, and evening, such as a little milk whey, arrow-root, gruel, or any similar article. Even in convalescence the change should be very gradually made to a better diet.

7th. *Blistering*. Never apply a blister while the heat is highly developed, or the sensibility highly augmented; when you have reduced the urgency of the febrile symptoms, by the modes before pointed out, and a slight degree of uneasiness only

remains, then a small blister applied to the nape of the neck, or epigastrium, is often attended with considerable advantage. But in the first stage of inflammation of the brain, never apply a blister, while the patient is preternaturally sensitive, over the head: but on the approach of the second stage, when torpidity or heaviness occurs, it is frequently beneficial when applied there.

The 8th means is the use of *Opium*. When the inflammation of the brain has been subdued, or nearly so, by evacuations, and you still find the patient with a skin hotter than natural, a remarkably hurried respiration, a small thready, rapid, or tremulous pulse, and when he complains of lightness in his head and is extremely restless, tossing to and fro in his bed constantly, in short, changing his place or position, a full dose of opium, two or three grains, will be found exceedingly beneficial; indeed it may be considered a sovereign remedy under such a state of general irritation. I have seen several cases where full doses of opium have produced the very best effects. Opium may also be given with very great success in some cases of madness: but recollect never to give opium in inflammation of the brain till copious evacuations have been premised, and till great restlessness supervene.

I have considered inflammation of the brain in adults as having occurred without any other inflammation: sometimes this is the case, but at other times inflammation of the brain is attended by inflammation in other organs, such as the serous or mucous membranes in the cavity of the chest or abdomen. In old persons and in children, you will often find the bronchial membrane inflamed at the same time, and this combination requires some modification of the treatment. When inflammation of the brain occurs in very aged persons, you must endeavour to check it by the smallest possible loss of blood, when combined with a bronchial affection, because if you bleed such an individual in the same decisive way in which I have recommended persons to be bled in the middle period of life, without such a concomitant, the case would generally terminate unfavourably. One of two things would happen, the aged person would either sink under the copious bleeding, or, if he recovered, he would drag out a

miserable existence by remaining in a very weak and languid state. Generally speaking, moderate bleeding will suffice in old persons, if you adopt the other means simultaneously. I believe, that in the management of such cases, I have drawn less blood than most other practitioners; and I think it is because I have paid so much attention to the regimenial and mental treatment, the influence of which is so highly important. Success in practice depends not so much on the application of one measure, in many instances, as on the co-operation of several, contributing to the same end.

The exciting causes from which inflammation of the brain proceeds very much modify the treatment. If, for example, any man were to say, that because the brain is inflamed in the advanced state of typhus fever, the case then requires the same treatment as an inflammation of that organ in the commencement which arises from a common cause, he would commit a great mistake; for in the former the inflammation is passive, the heart's action being subdued, and the strength prostrate, so as to require mild measures. Common inflammation of the brain may almost always be speedily removed by the plan which has been laid down; and if any degree of simple fever should remain, it will be removed by rest, spare diet, daily aperients, and a regulated temperature; but when these means fail, then you may prescribe digitalis, say 10 drops of the tincture every 6 hours, till the pulse be reduced, when it ought to be entirely omitted.

PROGNOSIS.

In your prognosis of inflammation of the brain you must be guided first by the *degree* of inflammation. In acute inflammation there is more danger than in the sub-acute, because the former runs a more rapid course, and allows less time for the operation of remedies. The *habits* of the patient very much modify the prognosis. If inflammation of the brain attack a confirmed drunkard, it generally proves fatal. If the patient labour under excessive anxiety of mind, it also generally proves mortal. If it occur in an aged person, it is more dangerous than in a man of thirty or forty years of age; because the old do not

bear evacuations so well as younger persons, and the inflammation is frequently mixed up with some organic affection. What at first sight appears to be simple inflammation is somtimes the result of an organic affection of the brain; and, in order to detect this, you must trace the history of the disease backwards, from its origin, through its progress, and up to its present state. I recollect having attended a lady who died of an apparent attack of inflammation of the brain. On examining the body after death, a chronic abscess was found in the cerebrum, and another in the cerebellum, while the liver was likewise much enlarged, breaking short like gingerbread on handling.

She had complained a long time before of pain and uneasiness on the front and back part of the head, and also at the pit of the stomach. This chronic disease was wound up by an attack of acute inflammation, which ended of course fatally. When delirium occurs very early, and continues constantly, in inflammation of the brain, it is a very unfavourable sign. Squinting is a very unfavourable symptom, but before forming your opinion from this point, you should ascertain that the patient did not squint in health, and always consider the combinations of symptoms. Difficulty of deglutition, great prostration of the muscular form, gathering the bedclothes into folds, picking feathers, catching at things in the air, are very serious, and often fatal symptoms. But, however unpromising the appearance may be I would advise you never to give a patient entirely up who is labouring under inflammation of the brain; for I have seen several recover under the most discouraging circumstances. If you should give a decidedly fatal prognosis, the friends will be sure to call in another practitioner, on the supposition that *you* can do nothing more; and if by any chance the patient should recover, your reputation might be sacrificed, or, at all events, be much injured. Such is the uncertainty of human opinion, on some occasions, that it always becomes us to speak with caution, especially on a subject where the public are prone to make too little allowance for any failure.

LECTURE X.

THE subject of this Lecture will be the *treatment of inflammation of the brain, as it occurs in infants and children.* But previously to entering upon it, I shall recapitulate some points respecting the pathology of hydrocephalus internus, and likewise respecting the mode in which inflammation of the brain attacks infants and children.

HYDROCEPHALUS INTERNUS.

What is called hydrocephalus internus is not an effection *sui generis*, but merely the effect of three different conditions of the brain: 1, Venous congestion; 2, Inflammation, arising either from a common or peculiar cause; and lastly, Organic diseases of the brain.

Hydrocephalus internus, as the effect of venous congestion, is by no means uncommon in infants, delicate children, and very aged persons, particularly such as are affected by chronic bronchial affections. In such examples, the skin is cold, the pulse feeble, the respiration weak, and the brain oppressed, as described in the worst forms of common congestive fever, under which indeed such cases ought to be arranged. An infant, for example, is taken out thinly clothed in a cold day, and becomes chilled in the arms of the nurse, you are called to him shortly afterwards, and you find him lying in a state of apparent insensibility, or at least indifference to those surrounding objects which before at once attracted his attention.

The breathing is hurried, the pulse small and weak, the skin pale and cold, the pupils dilated, the conjunctiva blanched, and sometimes convulsions occur early, but at other times only in the progress, or towards the close. Again, a similar condition of the circulation arises from some offending food having been taken into the stomach, and therefore you should always make a point of inquiring whether anything indigestable has been recently given,

since the removal of that from the stomach, through an emetic, or when that fails to operate, the administration of a little opium, as an enema or suppository, will frequently save the child, particularly where convulsions have followed the shock occassioned by the improper diet. But where a child is directly sunk into the extreme form of congestion, you should always use the hot air bath, and tepid, or rather hot, drinks, if the child can swallow, in order to create re-action; and where these do not succeed, then small doses of opium sometimes answer remarkably well, especially if combined with small doses of calomel. Recollect, that when a child cannot swallow, you may administer the opium by the rectum, the graduated dose of which, as influenced by the age of children, I shall afterwards give you in the form of a table. When you have succeeded in producing excitement, your plan must be entirely changed, you must, in fine, withdraw all excitants as soon as ever the skin becomes hotter than natural. Congestion of the brain, leading to hydrocephalus internus, sometimes assumes an intermediate form, which is best removed by bloodletting and purgatives; but when you bleed either locally or generally, watch the effect produced upon the pulse. If the bleeding be beneficial, the pulse will rise in fulness, will become freer, more expanded; but if it be prejudicial, the pulse will sink: and then you must immediately desist, and rely mainly on active purgative medicines, with small and repeated doses of calomel, till the skin becomes warm. Even in some cases of an intermediate form, you may be called to a child struggling with convulsions, the pulse being oppressed, and the skin cool on the extremities. If, on inquiry, you find that the stomach has been crammed with indigestible food, nothing answers better in removing the convulsions than a gentle emetic. A little girl, one day, had eaten a large quantity of gooseberries, and was taken in the way I have described, she had been bled before I saw her, without any benefit, but an emetic was administered, and the convulsions were removed. When the convulsions continue after the emetic has been given, nothing answers so well as *opium*. Dr. AYRE, has seen a great many cases of convulsions occurring in children from disordered stomach, where opium has been very successful, intro-

duced as a suppository, where the deglutition was difficult. But the brain is sometimes congested where convulsions do not occur in the commencement, as occurred in the following case. A fine stout boy, about three years of age, had eaten some plum cake and some oranges. He became very sleepy, and at last indifferent. The pupils were much dilated, the conjunctiva very blanched, the skin pale and cool, the pulse labouring, and the respiration heavy. In this state he had remained some time, when spontaneous vomiting occurred on moving him, and in a few minutes he left his mother's knee, and showed a disposition to play with the other children. I have known several of such examples pass into hydrocephalus internus, when neglected or maltreated.

These remarks were merely made to remind you, that there is a state of the brain which may ultimately lead to effusion, either between the membranes or into the ventricles, and yet it is distinct from inflammation.

SYMPTOMS OF INFLAMMATION OF THE BRAIN.

Inflammation of the brain in infants and children comes, in some instances, on very rapidly, marked by a very hot skin, a quick full bounding pulse, a bright eye, with a dull intellectual expression, a variable pupil, a dropping of the upper eye-lids, with restlessness, fretfulness, and subsequent heaviness. Convulsions very often take place suddenly, and generally just as the child awakes from his sleep; he has first an expression of terror on the countenance; he has tremor over the upper part, or over the whole of the body; the head is then turned to one side, and the eye is fixed upon vacancy. The pupil expands usually during the occurrence of the convulsions. In slight cases, the infant or child appears as if very much frightened, trembles, looks wild at first, and vacant afterwards, clinging forcibly to the nurse or mother, while this state continues. If the attack of convulsions or agitation subside for a time, which often happens, there remains an expression of great alarm, and the sweat pours from the surface of the body, which is warm as well as damp, where it is covered. When called to a case of this kind, you should inquire

whether the little patient has had a fit before; if he have had one before, it is very likely to return, and, doing so two or three times uninterruptedly, it generally proves fatal. In these cases, where the *fever is highly developed*, and where it is followed by *convulsions*, the patient is sure to be lost, unless he be promptly and properly treated. The treatment, in a word, is *decisive blood-letting*. I can give you an example of this in my own child; he was seized with such an attack of inflammation of the brain, and I had done what I thought necessary, and went out only for a few minutes, at the urgent request of one of my pupils to see his sick friend. During my absence he had a fit of convulsions; and very soon after my return he was seized by another fit; a medical friend of mine, an excellent practitioner, was in the room at the time, and while I stood gazing at my boy, in an agony of mind, he called me to a real sense of his danger by exclaiming—We must bleed him directly. He was bled immediately, and the convulsions were removed, as if by a charm. I have seen several similar cases in other children, and have witnessed a similar effect from the same remedy. The best place to bleed children is at the bend of the arm, in the external jugular vein, or in the temporal artery. In these very urgent cases, it may be necessary even to repeat the bleeding; but you must be very decisive at the outset: you must bleed to approaching syncope, but take care to stop before the syncope absolutely occurs. If you bleed a young child to actual syncope, you must recollect that it is apt to be followed by convulsions. There is another reason why I should generally avoid doing this in very young children; a higher degree of the heart's action generally follows if the bleeding be carried to perfect syncope at once. Avoid, unless from imperative necessity, large repeated bleedings in very young children, for the loss of so much blood gives a shock to the system from which they do not readily recover. In the above cases, you must follow up the bleeding by free purging, and the diet at the same time must be remarkably spare. For the infant there is no diet so good as the milk of the mother or nurse.

There is a second form of inflammation of the brain in infants and children, namely,

THE SUB-ACUTE.

In this form a less degree of fever exists; the skin is not so hot as in the foregoing, the pulse is not so quick, and the functions of the brain are less powerfully disturbed. You generally find it, too, connected with some other and remote irritation, the seat and nature of which you must try to discover; for when inflammation of the brain is connected with a remote irritation of an internal organ, especially if it amount to actual inflammation, it generally proves fatal, unless it be removed, as well as the inflammation of the brain. Dentition is a frequent source of irritation, and when you find a child labouring under the affection which we are now considering always make a point of examining the gums; if they be red, tense, and swollen, you should divide them freely in the manner I have before described, longitudinally, and transversely. This takes off the tension, and the flow of blood tends to lesson the fever. Another scource of irritation is often to be found in the mucous membrane of the stomach; if you have an opportunity of examining the tongue, you will find its tip and edges near the tip more red, and the papillæ more red and raised than natural, when the child has a flatulent stomach, with nausea, retching, or vomiting. The liver may also be the seat of co-existent irritation, and in that case the stools will exhibit a defect or depravity of bile, some tinge of which may also be often discovered in the urine, or on the surface of the body, particularly about the face. The irritation may be in the mucous membrane of the small intestines, and then the tongue will have the same appearances which I have described in the irritation of the mucous membrane of the stomach; but the stools on examination will be more slimy than naturally, will have an oleaginous appearance, like thin paint. The irritation may be seated in the mucous membrane of the large intestines, when diarrhœa generally attends the stools, usually being like dirty mud-water. The irritation may be in the skin, the functions of which are frequently impeded by inattention to cleanliness. In such cases, it is dry, withered, rough, and husky even. This may also lead you to examine the external glands in the neck and elsewhere; if you find them enlarged, you

should trace the history of the case backwards, and if you discover that the skin first became pallid, the belly tumid, the tongue furred, the stools unnatural, the extremities much wasted, then you may infer, probably, that the internal glands, either the mesenteric or bronchial, or both, are enlarged. When inflammation of the brain assumes a sub-acute character, and when some remote irritation simultaneously exists in the gums, stomach, liver, or bowels, bronchial lining, or skin, then, of course, two objects must be regarded in the treatment; the first is the removal of the inflammation in the brain, the second the removal of the remote irritation, as that not only influences the affection of the head, but may be, abstractedly considered, more or less hazardous.

In the exhibition of *purgatives* during the first stage of inflammation of the brain, take care to avoid the common error of giving large doses of such drugs, or prescribing very drastic ones, particularly where any intestinal irritation is an attendant. Recollecting the very delicate structure of the mucous membranes of the stomach and intestines of children, you might infer *a priori*, that such medicines would produce great mischief by irritating that structure. No man can observe the operation of drastic purges on the mucous membrane of the intestines, without seeing that they produce, in many cases, as bad an affection as that which they were intended to remove. Under the ordinary febrile attacks of children, calomel is the mildest and the best purgative; one, two, or three grains may be given in the course of the day, with a few grains of rhubarb, followed by about a tea-spoonful of cold-drawn castor-oil, or a little infusion of senna, with a small dose of Epsom salts. No error could be greater than that which the late Dr. JOHN CLARKE committed, when he recommended large and repeated doses of calomel for children. But do not suppose that I allude to this circumstance by way of detracting from his general merits, which were great. It was an error which, in the earlier part of my practice, I committed myself too repeatedly; but having been set right by a more strict and impartial observation of facts, I am bound to acknowledge this, and to caution you against the commission of like errors.

Previously, however, to the use of purgatives, you should always bleed in the first stage of cerebral inflammation. If the infant be very young, you may do so by applying leeches to the temples, or sternum, until the child begins to heave at the chest, and until the pulse begins to falter. You may produce a decided impression on the heart's action, by the application of leeches in young children. But in such cases be sure always to apply leeches on those parts where pressure can be so applied as speedily to staunch the bleeding punctures if necessary. Never, indeed, leave any infant or child after having applied leeches, until the hæmorrhage has completely ceased, for, not seeing this accomplished, the bleeding might continue many hours, and the nurse and mother, becoming alarmed, might not have enough presence of mind to adopt any method of stopping it themselves, and, provided proper assistance could not be timely obtained, a delicate infant might thus be lost from hæmorrhage, an event which ought never to take place. The bleeding may be restrained by a little lint being pressed with the fingers steadily over each puncture, or by a little felt of a hat applied in the same manner, till the punctures no longer bleed, and afterwards secured by adhesive plaster applied above. A solution of sulphate of zinc, or a little oil of turpentine, applied to the part will frequently stop the bleeding. If it should be very obstinate, touching the part with a pencil of lunar caustic in general will effectually stop it, or you may pass a very fine needle through the edges of the orifice, and completely close it by twisting a bit of fine silk over the ends of the needle, as in the operation for hare-lip. Other modes of abstracting blood may be resorted to, as opening the temporal artery, the jugular vein, or cupping. You are to attach no importance to the mere mode of abstracting blood, but regard only the effect. Yet I might mention an exception to this, as it respects the application of leeches ; for it has repeatedly appeared to me, that the abstraction of a given quantity of blood by leeches makes a more direct impression on the heart's action than when abstracted from a large vein. My attention was directed to this subject many years ago, when attending a gentleman who had an obstinately

severe pain in his head, from which he was relieved by leeches, after being twice bled from the arm without any benefit. The quantity of blood lost by the leeches was very little, compared with that previously taken from a vein, yet the effect on the pulse was considerable, it fell as much as twenty strokes in a minute. Leeches seem to exert an influence which, in the present state of physiology, cannot be satisfactorily explained, not only on the capillary system, but on the nervous, and ultimately on the heart itself. But though we cannot explain the fact, still we can apply it to the purposes of practice, as shall be more especially illustrated when I shall have occasion to speak at large on inflammation of the mucous membranes. Upon the whole, we perhaps, in this country, attach too high an importance to the local abstraction of blood, on the supposition of relieving the part through the anastomosing branches; but generally, little benefit is produced, in acute or sub-acute inflammations, except where the local blood-letting has been carried sufficiently far to influence the heart's action, and the whole capillary system of vessels. The most ancient mode of bleeding we find, from CELSUS, was that of introducing an instrument up the nose to produce hæmorrhage; and certainly, in many cases of inflammation of the brain, I have observed good effects from spontaneous bleeding of the nose. Again, the French bleed from the foot by leeches, when the head is affected, and though the practice has been laughed at because it is coupled with an absurd hypothesis, yet I have seen it very serviceable in some affections of the brain. Blood-letting properly managed, whatever be the mode, will generally either wholly remove the inflammation of the brain, or so lessen its force, that it will subsequently yield to purgatives, provided these measures be applied at the commencement.

Another point in the treatment is to allay the mobility of the system. When you have removed an inflammation in an infant or child, you will frequently find that it remains in a state of great mobility, tossing to and fro in the bed, very fretful, with a rapid, small pulse, a weak, hurried respiration, a skin somewhat hotter than natural, a moist tongue, and an exhausted expression.

If you neglect the patient in this state, he will die from that condition called general irritation, which, in such examples, generally exists without inflammation. You must then carefully attend to the temperature of the room, which ought not to be above 60° or 62°, and which ought to be properly ventilated, and kept remarkably quiet. The tepid bath is then often useful in procuring sleep. Always recommend mothers to accustom their children from infancy to the use of a bath, beginning with it tepid, and gradually lowering the temperature until it become cold, or say, about 60° of Fahrenheit. If children have not been accustomed to a bath, it sometimes produces great fear and consequent agitation, which are extremely prejudicial in such a critical juncture, and which should therefore be avoided. Another point necessary to attend to, in order to remove this state of mobility, is the diet. The child should have a small but more frequent supply of light food. Indeed a similar condition is excited frequently in the progress of infantile disorders, by too long fasting. Infants cannot express their wants; but if the lip be dry, and they twist their mouth about and cry, you may be certain that they are suffering from the irritation of hunger or thirst, and a little bland food, or some cold water, will then often induce sleep. Be mindful always to have, if possible, a sensible, kind, and honest nurse in attendance.

If a nurse manage a child well, she will often soothe it to sleep in a short time; whereas an unskilful or ill-tempered one will frequently protract the disease by inattention to the wants of an infant, or by handling it roughly when it is fretful from irritation. No diet, as far as I have observed, is so good as the milk of the mother, whose breast is often a better anodyne, in restlessness, than any opiate in the world. But where the above means fail, a drop or two of opium will frequently save an infant's life by procuring sleep. The same might be said of children under these circumstances, for whom somewhat larger doses are necessary.

If, when inflammation of the brain has been removed, any degree of inflammation should exist on the mucous membrane of the bowels, you may commonly remove that by the application

of a few leeches to the belly, aided by small doses of calomel once a day, conjoined with a few grains of rhubarb, followed by a little castor oil. You should remember, that the exhibition of calomel in fever often changes the colour of the stools entirely, and, forgetting this, you might imagine that the colour depended on a faulty secretion of the liver, and might go on giving the calomel day after day for the removal of that which in fact it had first created and next maintained, namely, green, slimy, chopped, and curdly stools. ERISISTRATUS mentions, that purgative medicines change very much the nature of the stools, and I have known many serious effects arise from continuing calomel and blue pill to correct a supposed morbid secretion. If you have any doubt, suspend the use of these medicines for a day or two, and if the stools become more and more natural there will be no occasion for their repetition. Calomel has frequently a very good effect in emulging the liver and the mucous glands of the intestinal canal; besides, it produces universal relaxation, which sometimes even solves fever in the commencement. If you find a child becoming sick before or after, or during the operation of calomel, you should be cautious in repeating it on that day. It is generally very useful while the fever is unabated, but there is no necessity for continuing it when the fever has fairly abated. Many children are lost by continuing an active treatment after the original disorder has been removed, another, in truth, being thus set up and supported.

The two foregoing are the forms, acute and sub-acute, in which inflammation of the brain most frequently occurs in infants and children. But it sometimes assumes a more *chronic form*, often mixed up with some affection of the stomach, liver or bowels. Recently I saw a little boy who had this modification of the disorder, and I understood that two in the same family had died of hydrocephalus, or water on the brain, as the result of a similar affection. On inquiry I learned that his pulse had been a little quicker, and his skin a little hotter, than natural; his tongue furred, and bowels disturbed for some days before he grew dull and sleepy, with a dilated pupil, in which state he was when I saw him. On rousing him from the

heaviness in which he lay, I saw that the cornea was glassy, the pupils expanded, but the conjunctiva was blanched; he made no complaint, and when left alone sunk into an apparent sleep, attended by an occasional deep sigh. I predicted an unfavourable termination. He became more and more torpid, and at last died, and much serum was effused into the ventricles. Now these cases generally go on insiduously and terminate fatally, unless you can see the patient early, and remove the chronic affection of the liver, stomach, and bowels, which commonly precede that of the brain, and which indeed excites the latter, partly on the law of nervous sympathy, and partly on that of vascular excitement. At the beginning, you may often succeed in stopping its progress by the exhibition of calomel purges, and by the application of leeches and blisters.

It ought to have been observed, that inflammation of the mucous membrane of the bronchial passages often exists with that of the brain. If you find an infant with hurried and wheezing respiration, a deep and stuffing cough, a lip more dusky, and a cheek more pale than natural, blended with a degree of livor, a quick pulse and a hot skin; moreover, if he become heavy, and if when you rouse him from that state you perceive the cornea glassy and the conjunctiva blanched, and the pupil more contracted or dilated than natural, you may infer that the cerebral is combined with the bronchial affection, a combination which generally requires great care as to blood-letting. If the skin be uniformly very hot and the pulse expanded, you may abstract blood moderately; but if, on the contrary, the skin be cool or warm, and the pulse soft and compressible, with a weak respiration, be most cautious in the abstraction of blood; because if you were, by copious blood-lettings, to lessen the powers of respiration, the patient would sink most rapidly; small bleedings, and those only early, answer best in such cases. I know that I differ very much in my opinion on this point from some of my medical friends; but I know also, from having made a comparison between those cases in which I have been more careful as to bleeding and to those cases in which the patients were more freely bled, that the balance is decidedly in favour of

the cautious practice.—Leeches having been applied, with due circumspection, in the first instance, afterwards the simultaneous operation upon the bowels and skin by purgatives and diaphoretics, will be found the most serviceable in examples of this nature.

With respect to a blister in this modification of inflammation of the brain, I would advise you to avoid it in the first stage, whilst the skin remains hotter than natural; but if the child become torpid, a blister may be applied advantageously to the shaved head.

Once more I may now advert to the effects of *opium*. After the inflammation of the brain has been removed, the pulse in young children frequently becomes very rapid, small, and even tremulous; the tongue moist, the skin hotter than natural; the child fretful; the expression of the countenance discontented and exhausted, while the breathing is hurried almost to panting. All these symptoms may be frequently removed, as if by magic, through the administration of opium. Though Dr. J. Clarke committed a great error in recommending large doses of calomel in the treatment of infantile affections, yet he committed another and a greater in excluding the use of opium, for you may often save children by opium when all other means fail, particularly in the combination of symptoms before mentioned.

One of the most common affections which is followed by inflammation of the brain is, what has been technically termed *marasmus*, succeeded by fever, denominated the *infantile remittent*. Both terms are very objectionable. Marasmus is an abstract term, under which, conditions are involved often discrepant from each other. In one child you will find the seat of irritation in the mucous membrane of the stomach; in another in that of the small intestines; in a third, in a torpid liver; in a fourth, in an overloaded and sluggish colon; and in a fifth, in some morbid state of the skin; or some or all of these may be combined. The term infantile remittent fever expresses no pathological conditions; it is, indeed, one of those phrases by which we conceal our ignorance from the public eye. It is a fever either simple or inflammatory; if inflammatory, you must look

especially to the mucous membrane of the stomach, small intestines, and also to the state of the liver.

When an irritation arises internally, it frequently excites fever; this may be at first only simple fever, the blood being equally distributed throughout the body; but in its progress, this fever may become inflammatory, and therefore you must be very much upon your guard to detect the rise of inflammation, particularly if it should take place in the brain, as often happens in young children.

No man would be justified in adopting an active plan of treatment, either in the case of an adult, infant, or child, unless he thoroughly understood the nature of the disorder. The practitioner, before adopting such a treatment, should ask himself this plain question,—Do I, or do I not, clearly comprehend this affection? If he do not, he should have an additional opinion before venturing to draw one drop of blood from the human body.

Five points require to be particularly attended to in the treatment of inflammation of the brain in infancy and the beginning of childhood.

First,—The effects of blood-letting. 1. If carried to an extreme degree, convulsions are very apt to supervene, and children may die in these convulsions. 2. Copious bleeding is generally followed by a higher degree of excitement of the heart than in adults, and more disturbance of the nervous system. 3. When infants, or young children, are bled very profusely, they do not so readily recover from the shock which the system sustains.

The *Second* point. They do not bear fasting so well as adults, and therefore require more frequent supplies of light food.

A *Third* point is, that the mobility (by which I mean a morbid sensibility and contractility of the body) is greater than in adults, and therefore they require anodynes, such as the exhibition of opium under the limitations before specified.

Fourth. The great delicacy of the skin, and mucous membranes generally, requires not only that you should be more cautious about the application of blisters, but that you should studiously avoid the exhibition of drastic purges in the first stage; but in

the second stage, you may generally administer them without producing irritation, as the sensibility of the whole body is then diminished, for instance, calomel combined with gamboge or scammony.

Fifthly. The removal of acidity in the stomach or bowels is a very important point, for being allowed to remain, it so irritates the stomach and bowels, as either to excite a degree of inflammation there, or a lower one, sufficient, however, to disturb the nervous system and the heart's action, more particularly in infancy.

LECTURE XI.

In this Lecture I shall notice two affections, namely,

1. THE ACUTE AND SUB-ACUTE INFLAMMATION OF THE SPINAL CORD, AND ITS MEMBRANES.

2. *An affection of the Brain*, closely resembling phrenitis, but which, being different in its pathology, requires a very different treatment; it is what has been called *Brain Fever*, or *Delirium Tremens*.

Acute or sub-acute inflammation of the spinal cord and its membranes frequently occurs with inflammation of the brain; and I am inclined to believe, that if in all cases of inflammation of the brain and its membranes, which terminate fatally, we minutely examined the spinal cord and its membranes, we should very frequently find the vestiges of inflammation either in one or in both of these parts. Inflammation of the spinal cord frequently, however, occurs without inflammation of the brain; it happens also more frequently from peculiar than from common causes: for instance, malaria has a very remarkable effect upon the spinal cord; so much so, that I have scarcely ever seen the spinal cord examined in patients who died from the influence of malaria, without finding traces of inflammation there.

When inflammation of the spinal cord, or its membranes, does occur from common causes, and when it is attended by fever, it may be considered as a variety of common inflammatory fever.

If a person be in bad health, he is on that account more prone to inflammation of the spinal cord, especially if exposed to cold and wet. A gentleman, an acquaintance of mine, sustained great mental anxiety; the stomach, liver, bowels and skin became disordered, and when in this state he began to complain of an obscure pain in his head, which, growing more and more troublesome, especially in the back part, at last extended down the spine. He rambled in his walk like a man having gout or rheumatism. Some little time afterwards, from exerting himself too much, he had an acute attack of inflammation of the spinal cord, combined with inflammation of the brain and intense inflammation of the mucous membrane of the bronchial and intestinal lining. I saw him on the eighth day after the acute attack, and he was then so alarmingly ill that I gave an unfavourable opinion as to the issue of the case. It is an affection most frequent in variable weather, when the middle of the day is hot and the evening very cold. If we except those cases which arise from external injury, females are more prone to this variety of inflammation, at least this is the result of my own observation.

INDICATIONS.

There are several symptoms which point out an acute or subacute inflammation of the spinal cord.

1st. Pain seated in the neck, back, or loins, sometimes extending throughout the whole course of the spine, but more generally confined to one of the forementioned parts. The pain is generally increased by bending the body backwards or forwards, or by twirling the trunk from one side to the other; or by pressing the finger firmly on that portion of the vertebræ under which the pain is principally seated.

The 2d symptom indicating inflammation of the spinal cord, or its membranes, is pain, numbness, or tingling in the upper or lower extremities. If the inflammation be seated about the cervical portion of the spine, then you have pain, numbing, or tingling, or all these combined, in the upper extremities; if it be seated principally in the lumbar portions, then the lower extremities will be similarly affected. The pain in the limbs is

sometimes so acute and wandering, that patients often suspect that they have rheumatism. I recollect the case of a young physician, who had been a pupil here; he was attacked by wandering pains, which he considered rheumatism, in both the upper and lower extremities; on visiting him, I perceived that there was a dropping of the upper eye-lids; the light was rather painful to him; his skin was hotter than natural, his pulse quicker, and he complained of pain in the back part of his head, neck, and loins, with numbness and tingling, as well as pain in the extremities. These and other co-existing symptoms led me to infer that his complaint was not rheumatism, but a sub-acute inflammation of the brain and spinal cord, particularly as there was no swelling in the affected limbs.

The 3d symptom indicative of this affection is, a diminished sensibility of the touch in the fingers, or feet. A remarkable example of this kind occurred sometime ago in the hospital, and was witnessed by several of my pupils, in which the woman did not perfectly recover the sense of touch in the fingers for some weeks after convalescence.

4th. Tenderness on one or more parts of the surface of the body. Sometimes this tenderness is universally diffused, and the patient shrinks from the slightest touch; at other times it is confined to the upper or lower extremities; to the integuments of the chest, belly, or even those of the head. You must be very cautious to distinguish this from the tenderness attendant on inflammation of the belly. The pain on pressure of the abdomen might, perhaps, induce you to suppose that there was inflammation going on there, but all the other characteristics of abdominal inflammation are wanting in such a case.

5th. Some defects, irregularity, or loss of muscular motion; for example, the patient has not full power over the motions of the upper or lower extremities when he attempts to rise; or he cannot clinch his hand or grasp any thing so firmly, or stand so steadily on his feet, as in health. Sometimes there is an irregularity of muscular action, such as tremor; the patient, if he tries to bring any thing to his mouth, does so by jerks, or he appears, in bad cases, as if he had a shaking palsy. In other

instances, there are twitchings or contractions about the fingers or toes; and in some the urine is retained a longer or a shorter time than natural.

These are the five chief indications of inflammation of the membranes of the cord, or of the cord itself. In addition to these others might be mentioned: the pain occurs in flashes in the direction of the spinal nerves; there is sometimes pain about the pit of the stomach, with anxious or irregular breathing. The pulse, if the inflammation be acute, is rapid, small, and hard; if the inflammation be sub-acute, it will be less rapid. The pulse is generally hard and quick in inflammation of the serous membranes, whilst it is, in general, comparatively soft when the mucous membranes are inflamed.

If you examine the spinal cord after the fatal termination of acute or sub-acute inflammation, you will find the medulla, or its membranes, or both, in the same conditions as I have described the membranes of the brain. Redness and opacity of the membranes, more red points, on cutting the medullary matter, than natural; occasionally softness of that part, with effusion of serum, or lymph, within the theca vertebralis, and the spinal nerves preternaturally injected about their exit. In very acute inflammation of the spinal cord, tetanus sometimes occurs. Two cases in which this happened were admitted into the hospital some years ago; but that tetanus is not invariably connected with an inflammation of the spinal cord is unquestionably proved, and I shall hereafter show you that tetanus occurs under various conditions of the body, not referable to inflammation of the brain, spinal cord, or any one internal part.

DIAGNOSIS.

The only affection that can be confounded with inflammation of the spinal cord, is rheumatism. But in acute or sub-acute rheumatism, there is more or less swelling or redness in the part affected. It occurs most frequently in and about the larger joints, and, when acute or sub-acute, is, I repeat, invariably attended by more or less of swelling and redness. Whereas in the inflammation of the spinal cord there is neither redness or

swelling, while there is also the *combination* of symptoms which I before enumerated, a combination not present in acute or sub-acute rheumatism.

TREATMENT.

With respect to the treatment of acute and sub-acute inflammation of the spinal cord, it is, like most other inflammations, remarkably simple. If the inflammation be acute, the treatment must be very active in order to save the patient's life. You will have, however, to treat inflammation of the cord more frequently in cases of genuine typhus fever, than in common fevers which arise from cold or any other ordinary agent of nature, and then the management is more delicate, especially if a bronchial affection be developed, with a dry brown tongue, as shall afterwards be illustrated. In common acute inflammation of the spinal cord, one or two decisive blood-lettings, followed up by blistering, purging, and a spare diet, will generally succeed. The blood-letting, thus employed, sometimes does not subdue the inflammation entirely, but renders it sub-acute, and then a continuance of the other means, especially daily purging, will effectually remove what remains of inflammation. When the inflammation of the cord assumes from the commencememt the sub-acute form, it may generally be removed by leeches, the use of purgatives, blistering the spine, rest, and an antiphlogistic regimen. The patient complains of loss of strength for some time afterwards, and therefore you must be particularly careful in the management of convalescence.

2. DELIRIUM TREMENS.

I shall now speak of an affection of the brain truly separable from inflammation, which in the North of England is called Brain Fever, but which has been generally denominated Delirium Tremens.

The first account of this disease was published by a Dr. PEARSON, but all the information which he possessed he had obtained from the late Dr. YOUNG, of Newcastle-upon-Tyne. Some time afterwards I published a paper or two containing the results of my observations on this subject, and Dr. SUTTON has since written on this disease, which he calls Delirium Tremens;

but delirium tremens is a term which is doubly objectionable; classically it would not be strictly correct to say that a delirium is trembling. There is, however, another and more important objection to the use of the term, for the tremor is sometimes absent. You may have all the other symptoms which sufficiently characterise the disease, and yet the tremor may be absent. A name which turns upon any particular symptom is very apt to be deceptive, for recollect we can only speak decidedly on an affection in general from a combination of symptoms.

CAUSES.

The remote causes of this affection are, as in others, either *predisposing* or *exciting*.

The predisposing causes are those which break up the general strength, such as mental anxiety, long fasting, loss of blood, and so on. The exciting cause, with two exceptions, is the inordinate use of ardent spirits, wine, or strong malt liquors. Although it generally arises in men who have drunk inordinately, Dr. AYRE has seen some cases which arose from the influence of lead. I have seen it also occur in persons who have accustomed themselves largely to the use of opium. I know a lady who was in the habit of taking opium week after week, and month after month; she was convinced that it was a bad habit, and tried to leave it off; she did so suddenly, and this disorder supervened. But in the numerous cases which I have witnessed, most arose from the abuse of alcohol under one form or other. It invariably comes on when the patient is in that state of exhaustion which follows stimulation. If a man be intoxicated to-day, on the following morning he feels exhausted, and if he be in the habit of getting intoxicated, he can do nothing before he has had his accustomed cups, which being suddenly left off or lessened, leave the nervous system in so disturbed a condition as to lead to brain fever or delirium tremens.

SYMPTOMS.

The first announcement of this affection is, a *general irritability* of the body. The patient is in that state which an old woman would call snappish. He is fidgetty and fretful, and, from

the merest trifles, gets into a furious passion, scolds his wife, whips the children, or swears at the servants, contrary to his common manner. The second symptom is *watchfulness* and *restlessness* at nights. The patient passes the night without sleep; he tosses about in the bed, and becomes still more and more fretful. A third symptom is, that there is some *peculiarity of conduct*, some unusual change in his character. He fancies that his friends have entered into a conspiracy to betray him; that there are persons concealed in his room to assassinate him; gets jealous of his wife; supposes that he is ruined, or is in a perpetual bustle about some imaginary pursuit or business. If abruptly interrupted, he is apt to get into furious passions, but his delirium is of the active kind, varying much as to subject in the course of the day, and his countenance undergoes correspondent changes. Fourthly, there is a *great activity of mind and body;* the patient is in a great bustle, constantly engaged either in his own concerns, or in the concerns of others, warding off conspiracies, picking up money, holding conversations, listening, or the like. If you ask him a single question, he will sometimes give a distinct answer; if you put many in succession, he grows confused and incoherent. Fifthly, there is generally a *great dampness* of the skin, particularly on motion; but occasionally this symptom is absent in the beginning. In the sixth place, there is generally *tremor* of the hands, most evident when the patient holds them out, or when he attempts to carry any thing to his mouth, such as a glass of water. But this symptom is sometimes absent, and therefore the name ought not to be derived from this symptom, because it might mislead an inexperienced practitioner in the diagnosis. Sometimes there is tremor of the tongue, which is always moist, and covered with a slight fur. Seventhly, the face is pale; eighthly, the expression is wild, quick, and varied, according to the predominant impression, so that the face will in a few minutes undergo striking changes, as sudden and striking as those which are said to have taken place in the countenance of the late Lord Byron, when the subject of conversation highly excited his mind.

The ninth symptom of Brain Fever is a *soft* and compressible

pulse. There is some exception to this in robust persons, where the affection is produced by a chance fit of hard drinking, for the pulse has often in those a degree of resistance. The tenth symptom is *extreme watchfulness*, so that the patient scarcely gets any sleep. In the last place, he is very apt to be seized with convulsions from violent exertions, copious evacuations, or fasting; but they are less dangerous in this disorder than in most others, provided it he properly managed. They most frequently occur after the patient has been excited by any mental emotion, or bodily exertion; the excitement being succeeded by collapse and convulsions, in which many expire.

When the body is examined after death, the veins of the pia mater are very much loaded, and generally you find some effusion of their serum between the pia mater and arachnoid membrane, appearances which will hardly explain the symptoms; indeed it appears to me, that the disease cannot be explained easily by any reference to the state of the vascular system alone. It most readily occurs when the system has been exhausted by some previous stimulation, and when the patient is in a state of great mobility; the pulse seldom ranging beyond 100 in the progress, except when excited by mental emotion or great exertion.

PATHOLOGY.

What then is the pathology of this affection? I really do not know. You may call it general irritation, or any other thing; or, if you like, constitutional disorder, or constitutional derangement, very convenient words certainly. But I choose rather to confess my ignorance than attempt to conceal it by the use of abstract terms. This affection appears to depend principally upon some condition of the nervous system, the nature of which we are unacquainted with in the present state of our knowledge.

DIAGNOSIS.

How would you distinguish this affection from *insanity?* As far as the mind is concerned, there really is no difference; but, physically speaking, there is a decided difference between them. It is distinguished by the peculiar combination of symptoms from

it, and from inflammation of the brain, as you will presently perceive. Again, you may inquire, how is mania to be distinguished from inflammation of the brain? By fever being absent in the one, and present in the other. If you relied on this circumstance merely, you might be at a loss how to draw the line of distinction between the two disorders, but the expression of the countenance is a good guide. If you walk round an asylum, you may perceive that the countenance of a maniacal person is not at all like that of a person labouring under phrenitis, or inflammation of the brain. There is in the former a side-look of suspicion, in the other, there is that confused appearance which I have before attempted to describe, by saying that it is an intellectual dulness combined with an expression of physical brightness.

How is Brain Fever, or *Delirium Tremens*, to be distinguished from *Phrenitis*, or Inflammation of the Brain?

These affections are more difficult to distinguish from each other than it is to distinguish the first of these from mania; but I think that if you attend to the following circumstances, you will be enabled to do so easily. *Brain fever* generally succeeds a fit of intoxication, or a fit of what is called hard drinking. It occurs in the collapse consequent on great excitation. Whereas *phrenitis* can generally be referred to other causes. In brain fever, the patient is at first irritable, then fretful, or he is remarkably busy and bustling; whereas in inflammation of the brain, the patient complains from the first of his head, having also lassitude and langour, terms which I before explained as meaning debility of mind and body. In brain fever the cornea has a glassy appearance, and the expression is wild or active; in inflammation of the brain, the cornea is also glassy, but there is an admixture, as it were, of physical brightness and intellectual dulness in the expression. Indeed it is such a combination, that no man can witness it without being remarkably struck by its peculiarity. In hrain fever the conjunctiva is blanched, or slightly streaked with blood, and the pupil is generally more or less dilated where opuim has not been exhibited. In inflammation of the brain, the conjunctiva is much more streaked with blood, and the pupils are contracted in the first stage, and preternaturally dilated in the

second only. The upper eye-lid also hangs lower down than usual, covering a larger portion of the globe of the eye in phrenitis than in health, which is not the case in brain fever certainly. In brain fever there are mental illusions from the first, the patient, as before noticed, imagines that there is some person in the next room waiting to assassinate him; he is busy telling his money, or settling his accounts, or stripping vermin from the bed. Now in inflammation of the brain, these mental illusions do not generally occur in the very beginning; they generally make their appearance on the second, third, or fourth days after the fever has commenced. In brain fever the patient is continually wanting to change from one place to another; he is in that condition which has been technically termed *jactitation*. In inflammation of the brain, the patient generally lies on his back, and has very little power, except occasionally, during the presence of a high delirium; so that when he gets out of bed he staggers like a drunken man. In brain fever there is an incessant activity of mind as well as of body. In inflammation of the brain, the mind is less active when delirium does even take place, less occupied in passions and pursuits and alarms and bustles. In brain fever the patient hardly ever complains of pain in his head, but in inflammation of the brain he almost always complains of pain in his head from the first, and the face is more flushed than natural, while it is paler in the other. In brain fever the skin is damp and relaxed, whereas in inflammation of the brain the skin is hotter than natural, and usually dry from the first. In brain fever the hands are most frequently tremulous from the first, like the hands of a confirmed drunkard before he gets his morning dram. In inflammation of the brain, the hands are scarcely ever tremulous until the last stage, when he lies prostrate on his back. In brain fever the tongue is very moist, and but slightly furred. In inflammation of the brain, the tongue is more furred and generally less moist. In brain fever, the patient will at times eat whatever is given to him greedily, whereas in inflammation of the brain, the appetite is generally lost, even to the loathing of much food.

Brain fever comes on and goes away suddenly, but inflammation of the brain comes on more gradually, and is a longer time in

going away. The tendency to convulsions in the former affection, upon any great mental emotion or bodily exertion, may be considered another characteristic. I must just observe here, that the presence of delirium is no indication of inflammation of the brain. You will often find that hysterical females are delirious, and then, during that species of delirium, the patient undergoes a great variety of changes in a very short period of time, such as from laughing to crying, from fainting to starting, and so on. Some persons become delirious as soon as the mouth becomes sore from mercury, and commonly there is then a degree of excitement present. I remember the case of a young girl whose delirium could be distinctly traced to this cause, and also that of the brother of one of my pupils. I can give you another instance of this where collapse, and not excitement, was a concomitant. I was called one night by a lady to see her husband, a physician, and I found him lying stretched out on a sofa, his countenance was pale, his skin cold and covered by a profuse perspiration, his pulse weak and undulating; the eye was fixed vacantly on one point and then on another, and he muttered incoherently. I inquired into the history of the case, and found he had been taking small doses of blue pill for some time, which had only slightly affected the mouth. From what I had previously seen, I knew that the mercury had been the sole cause of this disturbance. I opened the windows, allowed the fresh air to pass over him, and gave him small quantities of pure brandy, and he perfectly recovered from the shock. But take care lest you confound this delirium with the delirium which arises from fever. Attend to the combination of symptoms in both, and then you will distinguish them.

TREATMENT OF BRAIN FEVER.

If called early to a patient having this affection of the brain, I should first act upon the bowels by some mild *aperient medicine*, such as an ounce and half of the effusion of senna with about a drachm of the sulphate of magnesia, and the same quantity of manna, but previously to doing this you should make inquiries as to the state of the bowels, and if they have been recently open it

is unnecessary to give this medicine. After having done or ascertained this, you should next give the patient opium very freely, especially if he have been a confirmed drunkard ; the pulse will be very weak, the skin damp and cool, and in this state you should give a full dose of *opium*, say gr. 60 of the tincture, and you may repeat this every six hours for the first two days, if sleep should not occur. The object is to produce sleep, and if you can do this within the first forty-eight hours, you will generally succeed ; and the recovery will be very rapid. But if you do not succeed in the time which I have mentioned, you will rarely succeed at all by opium merely, and then you should be very cautious how you continue to push it in very large doses afterwards. If you succeed in procuring sleep, it generally continues for about six or eight hours, and when the patient awakes, you find all the symptoms have vanished like a dream. Where, opium, thus administered, fails, a mild aperient daily, with a moderate opiate afterwards, will frequently answer, provided the patient be properly supported with mild nutriment. There is one observation of importance which I would make in this place, it is this, whenever persons are excessively nervous, I mean in a state of great mobility, they require a considerable supply of food, it should not be given in large quantities at the time, but it should be given frequently. Persons connected with asylums are well aware of this circumstance. Nervous women also require small but frequent supplies of light nourishment. More food is necessary for patients recovering from this affection than under ordinary circumstances. Some of his ordinary beverage should also be allowed, if the patient have been a confirmed drunkard, such as ale or porter, or a little wine.

The *fourth* mean to be employed in the treatment is the application of *cold* to the head. Wrapping a cold wet cloth round the head will often very much relieve the patient and procure sleep.

The *fifth* mean is the use of the *tepid* or *cold shower bath*. When the opium fails to procure sleep in the time I have mentioned, we may have recourse to this measure in many cases. Dr. CURRIE has laid it down as a ruie that when the skin is

hotter and drier than natural, and when the patient is not particularly susceptible of the influence of the cold bath, then, and only then, can the cold effusion be used with safety. But these cases form a remarkable contrast to this description, and yet the use of the bath seems to produce a very excellent effect. A bath about 60° if the patient be robust, about 96° if delicate, will generally answer the best.

A *sixth* mean, and that which proves more useful than any other in these cases in which opium and the cold bathing fail, is *passive exercise in the open air*. The patient should be placed in a boat, properly watched, or in an open carriage, and thus moved rapidly, so that the air may play about him. This will often procure sleep where all other expedients have been tried in vain.

I am sure that I have saved several lives by adopting this practice. Another thing which I advise you to attend to is, not to lay any restraint upon the patient if he make the least resistance to it. If, for example, you think the straight waistcoat necessary, and you try to force it on, and the patient resists and struggles, you do infinitely more harm than good by the measure. The patient labours under some mental illusion; he thinks he is about to be assassinated, he struggles violently to escape but cannot, and the exertion brings on convulsions, and under them he sinks and dies. Avoid the straight waistcoat in all cases.

The bowels should be kept gently open throughout the whole of this affection. There are some few which require the use of blood-letting occasionally, but the practice is generally fatal, if used repeatedly and indiscriminately. Nevertheless, in youth, and whilst persons are single, moderate bleeding may sometimes be of service in the outset. How are you to decide when it is proper and when not? The pulse is the best criterion; if you find the pulse round, expanded, and resisting, while the skin is hotter than natural, then you abstract some blood till its force is diminished. But be cautious, most cautious, in repeating the operation.

I attended a case in this neighbourhood with my valued friend the late Mr. Edward Grainger, and we bled with considerable advantage. The delirium however returned often afterwards,

and the patient used to amuse himself by compelling his wife to snap a pistol at him now and then; he one day gave his wife a pistol which she supposed, as usual, was not loaded, and told her to snap as before; she did so; it chanced to be loaded, the ball, I believe, passed through his heart, and he died on the instant. I know a young man also who laboured under this affection, who was not a confirmed drunkard, but whose skin was a little hotter than natural, and whose pulse was firmer than natural; to him a moderate bleeding proved very useful. Le Sage satirised a French physician, Philip Hacquet, under the name of Sangrado, because he too generally recommended bleeding and warm water; and you know, whenever Sangrado's patients died, the doctor was sure to swear that they had not died of the disease, but simply because either they had not lost enough of blood, or that they had had too little of warm water.

Pray do not do as Dr. Sangrado did, but be very cautious how you bleed, especially in such cases as the present, for many patients have sunk rapidly after bleeding, especially confirmed drunkards, advanced in years. There are very remarkable ebbs and flows, of the muscular power in this affection which appear to depend on some irregular distribution of the nervous energy. I was once called to a remarkably strong man in this kind of delirium; while advancing towards him, he seized a polished poker which was near, and aimed a violent blow at my head; I thrust out my arm to defend it, and the poker, being brittle, snapped over it like a dried hazel rod. He then ran into the adjoining room and seized a similar poker there, but I suddenly sprung upon him, grasped him by the throat, and wrenched the poker from his hand, otherwise, I believe, he might have dashed my brains out. In a moment afterwards he sunk down, trembled, and became as powerless as an infant; so rapidly did he pass from the state of extreme strength to that of extreme exhaustion. This case should show you the necessity of always having proper attendants near such patients, and of always putting offensive weapons out of their way. Two male attendants are much better than one, because you can avoid the imposition of the straight waistcoat, a mean to which

I have strong general objections, and which ought never to be employed in these cases except where the patient remains quiet while it is on, a circumstance which rarely happens.

Some American physicians have employed emetics with considerable benefit.

PROGNOSIS.

Sometimes after convulsions these patients gradually sink into a state of torpor; they have a small contracted pupil and squint, all formidable symptoms. The convulsions are more serious in persons who have suffered much mental anxiety; more dangerous in old drunkards than in young ones, especially if there be any organic affections. If you can procure a sound sleep, patients generally do well. Only one exception to this remark has occurred in my own practice. The patient had slept long and tranquilly—he awoke, fell into convulsions soon afterwards, and expired. It struck me at the time, that he had died for want of sufficient food and care, for nothing had been given after he awoke, and in that state he had been allowed to leave his bed.

LECTURE XII.

SYMPTOMS AND TREATMENT OF INFLAMMATION OF THE MUCOUS MEMBRANE OF THE FAUCES AND AIR PASSAGES.

You are aware that the mucous membrane of the air passages and fauces is a continuous one, so that inflammation attacking one part of it may easily spread to another. Take, as example, common catarrh: the inflammation begins, perhaps, in the nostrils, it spreads down to the fauces, and finally extends itself throughout the whole of the lining membrane of the air passages.

In common catarrh, which usually arises from a low or variable temperature of the atmosphere, and in epidemic catarrh or influenza, which proceeds from some peculiar condition of atmosphere, the inflammation, indeed, often extends throughout the entire extent of the mucous membrane of the nostrils, throat, trachea, and

bronchia; whereas, at other times, it is more especially confined to some portion of this structure, particularly when cold is the exciting occasion.

It is necessary, in order to take a distinct view of the subject, to separate it into parts, as a variation in the seat of inflammation may require some modification in the treatment.

CYNANCHE TONSILLARIS.

Inflammation of the tonsils has been so technically called. The *predisposing causes* of this inflammation are such as I have frequently mentioned. Whatever breaks up the general health may be considered as powerfully predisposing to inflammation of these parts. Very often you will find that this debility is the result of what has been so very improperly called constitutional disorder. If you trace this supposed general disorder to its origin, you will ascertain that it arises from some previous affection of the brain, spinal cord, skin, stomach, intestines, liver, or some other part or parts, for it is not dependent on an affection of one organ only, but seated in different organs; discrepant too in its nature, it disturbs the whole health, and requires a different treatment in different cases. Unless, therefore, a man take the trouble to investigate and separate those conditions of the body, usually involved in the term constitutional disorder or derangement, he will never be able to arrive at a correct knowledge of their pathology, or know how to adopt an appropriate method of treatment. For instance, the disorder might be an irritation in the mucous membrane of the stomach, or small intestines; and if you were to prescribe a flesh diet and a blue pill, you would generally do harm; whereas these means would be useful if a torpidity of the liver were the cause which disturb the general health. Precision in pathology, and success in practice, are inseparably connected. Disorders of the stomach, liver, and bowels stongly predispose to inflammation of the tonsils and adjacent parts.

The *exciting causes* of inflammation of the tonsils and adjacent parts are various:—1. A high temperature. I have frequently known inflammation of the fauces arise from persons coming out of a cold atmosphere into a very warm room. There is then,

very often, an unequal distributiou of caloric throughout the body, and the inflammation takes place in that part where the caloric is most accumulated, provided that part, from the causes which I have before mentioned, be at all predisposed. High temperature operates as a stimulant or an irritant, commonly producing general excitement or local inflammation. Hot liquids sometimes at once produce inflammation about the fauces, and that being considerable, as well as sudden, is apt to spread to the mucous membrane of the pharynx and larynx.

More frequently you may refer this inflammation to the influence of a low or variable temperature which operates in two ways ; first as an irritant, thus at once inducing the inflammation ; and secondly, as a depressant, and producing the inflammation indirectly through the subsequent excitement, which I have before minutely explained.

Inflammations of the mucous membranes, in general, prevail most in cold damp weather ; whereas inflammations of the serous membranes prevail most in dry cold weather. Inflammation of the conjunctiva, which may be viewed as a mucous tissue, is by far more common in a cold wet atmosphere than in a dry cold one. There is very great difference in the distribution of electric matter in cold wet weather and in cold dry weather, less of it in the one, and more in the other : and as a deficiency of electric matter seems to debilitate the body, so it may thus be predisposed to the influence of a low temperature, and inflammations of the mucous membranes may often be the combined result.

There are some medicines which appear to excite inflammation in the mucous membrane of the fauces and tonsils, such as mercury, especially in children. Whenever you prescribe calomel for children, you should be very careful not to continue it too long, particularly when the skin is cool. Some time ago I saw a very fine boy lost by his having been directed to continue two or three grains of calomel every night, after his skin became cold ; inflammation of the mucous membrance of the throat, and larynx took place, accompanied by ulceration in both these places.

Calomel has, of late years, become the nostrum of the nursery ; mothers and nurses are continually giving it ; and I am certain

that crowds of children are made masses of scrofula by the misapplication of that medicine, so that they fall easy victims to acute affections which may supervene.

Women are very much like children in their habits, and therefore be very careful how you prescribe calomel for them also, when the skin is cool. The effects of calomel are modified by the state of the body at the time of its administration; and you must recollect that if, for any inflammation, you shall have employed blood-letting, and the skin has become cold, then you must be on your guard about the quantity, as in ordinary cases. In fact, it is only when the skin continues hot and dry that you can give calomel with safety in delicate subjects; watch the different circumstances under which you prescribe the same medicine, and you will eventually acquire great precision in its application, so as not only to do good but to avoid mischief.

There are other cases in which the inflammation of the fauces appears to arise spontaneously, or rather sympathetically, from some previous irritation of the bowels. Inflammation about the throat is sometimes one of the first indications of that break up of the general strength which so frequently follows grastic, hepatic, or intestinal affections of a chronic character. When erysipelas of the face arises in such a state of the system, the inflammation sometimes spreads throughout the whole track of the air passages, if its progress be not speedily arrested on the face. Indeed I hardly ever knew a case of what I shall afterwards call erythematic erysipelas to prove fatal, without some affection of the bronchial lining, as shall be particularly explained under the subject erysipelas.

SYMPTOMS OF CYNANCHE TONSILLARIS.

I shall now consider the symptoms of inflammation of the tonsils and adjacent mucous membrane, which is commonly called Cynanche Tonsillaris.

The symytom is a sense of soreness and fulness about the tonsils and throat. 2. Pain, and some impediment in deglutition. 3. Some thickness of the voice and breathing. 4. An increased secretion from the fauces. 5. Redness and swelling, on exa-

mination about the tonsils. This inflammation is attended by considerable fever when it is acute; and by less fever, as well as less local inflammation, when it is sub-acute. It occurs in strong and in weak subjects, a circumstance important as it regards the treatment, for the weak require less powerful evacations than the strong.

TERMINATIONS.

The inflammation of the tonsils terminates in three ways: by resolution, by suppuration, or by ulceration. But strictly speaking, there is no such termination as resolution, for some change always occurs in an inflamed part before the inflammation is removed such as effusion, which is the mode by which cynanche tonsillaris is sometimes spontaneously removed.

The second termination is in suppuration, and this is generally the termination of the disease in robust persons. When the inflammation is not arrested, the tonsils are then much distended, and the patients, if both have suppurated, have a sort of suffocating distension about the fauces, and breathe thickly and laboriously.

The third mode of termination is by ulceration, which often occurs in weak habits, and where ulceration does happen, the inflammation is the most liable to extend first to the mucous membrane of the pharynx and next to that of the larynx.

TREATMENT OF CYNANCHE TONSILLARIS.

The treatment is not difficult in general; if the patient be robust, you may cut short the affection by *bleeding* him to approaching syncope; and if any degree of inflammation should afterwards remain, you may apply leeches to the throat externally, which are then very serviceable. Next exhibit an *emetic*, which has great influence in rapidly removing, after bleeding, any residue of inflammation. Give, for this purpose, ten grains of ipecacuanha, with half a grain or a grain of tartarized antimony, to an adult. As vomiting can only take place during expiration, if you did not premise blood-letting in full habits, an affection of the brain might be the consequence, from the impediment to the return of venous blood in the superior cava. Emetics ought to be

avoided in those cases only where any degree of gastric or intestinal inflammation happens to be co-existent.

A third means of the removal of inflammation is the exhibition of an active *purgative;* calomel, combined with rhubarb and jalap in the first instance, followed up by an infusion of senna with sulphate of magnesia, so as to act copiously.

A fourth means, is an acidulated *gargle.* Gargles, however, have been very much overrated; they induce some secretion from the part; and when ulceration has taken place they sometimes do good, by inducing a more healthy action there.

A fifth means, is the application of a *rubefacient.* As the camphorated oil, or the volatile liniment, after the inflammation has been broken in its violence, the same observation obtains in regard to a blister. If the inflammation have assumed a chronic sort of character, then, and not till then, is it right to apply a blister to the throat. Be careful, when you apply a blister, to see that the skin is quite clean, for if any dirt be upon it at the time you apply the blister, a stain may be left for life, a disagreeable thing in a female. Do not, for the same reason, dress a blister with what is generally called Turner's cerate, or any other strongly-coloured unguent, but use a pure white ointment to those parts of the body which are exposed.

The diet should be of a very bland kind, and the temperature of the room should be between 60 and 66 degrees of Fahrenheit.

When the inflammation of which I have been speaking attacks weak subjects, it runs its course very soon through the acute or sub-acute stages, and degenerates into a *chronic* form of inflammation. If you investigate these cases you will invariably find, that they are combined with some disorder of the stomach, liver, or bowels, accompanied by a dry husky condition of the skin, which has then a faded appearance. If you were to bleed such patients in the same manner as those who are robust, they would either generally sink under the treatment, or lapse into consumption, or some similar disease. The best plan is to bleed locally by leeches in cases of this nature; to give a mild emetic, or gentle aperient, and to use a warm bath. Always ascertain, if you can, whether any cause of mental uneasiness exist; if so,

you must endeavour to remove it as soon as possible. If any disorder exist in the stomach, liver, or bowels, you must try to remove that also, by a properly regulated diet, by the influence of a fresh atmosphere, by the employment of a tepid salt bath occasionally, by a train of temperate and regular habits, and by daily regard to the bowels. You may, through attention to these circumstances, remove that chronic inflammation which remains as the sequel of acute or sub-acute inflammation; whereas it will prove protracted and troublesome, nay, sometimes dangerous from its combinations, if these be neglected.

CYNANCHE LARYNGEA.

Cynanche laryngea, or, as it has been more lately called, *laryngitis*, occurs on the whole more frequently in adults than in children. That modification of this affection, which is seated partly in the trachea, and which arises most frequently in children, is called *croup*, which is a dangerous affection, though less so than the more concentrated one, acute or sub-acute laryngitis.

SYMPTOMS OF LARYNGITIS.

1. There is a peculiar narrowness of sound, both in expiration and inspiration, in the most intense form of inflammation of the larynx, as if the patient breathed through a very small aperture. In the progress of this affection, where the epiglottis is implicated, there is a flapping sort of noise, made by that part not performing its office perfectly. This is always a serious symptom. Indeed, that flapping noise always makes me fearful about the issue of the case in which it is heard.

2. There is a suppressed voice, a small whispering or hoarseness.

3. The noise on coughing is peculiar, and distinctly referable to some change within the larynx, which you know is the organ of sound. In those instances, where the under part of the epiglottis and the rima glottidis are suddenly and greatly inflamed, the patient cannot cough out fully; when he attempts to do so, the cough ends in a low, grumbling, suffocating kind of noise about the larynx.

4. There is tenderness on pressure about the larynx, and little

or no expectoration, except in those cases where the patient has the power of coughing out fully, and even then the expectoration is inconsiderable.

5. The respiration is quicker than natural, and in the progress becomes laborious, so that the chest and alæ nasi are alike much moved, while the countenance acquires a more and more anxious expression.

6. The patient frequently hems; attempting to remove something by that effort from about the larynx.

7. The pulse is generally small and frequent, and grows quicker and quicker. Mark the set of symptoms, and remember that the breathing is not loud and noisy as in common croup.

The parts which suffer most in the form of inflammation which I have described, are the epiglottis and that part of the larynx called the rima glottidis. There are slighter forms of this inflammation, in which the voice is less affected, and in which the patient can cough out in the ordinary way, but still with a peculiar sound.

If you examine the body after death in these cases, you will often find the epiglottis œdematous, and remarkably red on its under surface; the mucous membrane of the larynx generally red and swollen, and lymph effused; and in lengthened cases ulceration is frequently found.

Where the epiglottis is much affected, it may be inferred during life, when the patient has a great dread of swallowing fluids, a small quantity of which, getting into the larynx, produces sudden and violent coughing.

CYNANCHE TRACHEALIS, OR CROUP.

The next form of inflammation of the air passages is less severe than the preceding, and is termed cynanche trachealis, or croup. But I have never known a patient die from croup, when, on examination, the mucous membrane lining the larynx has not been somewhat effected, as well as that of the trachea; and, sometimes, the inflammation extends to the bronchial passages. Frequently, there is an exudation of false membranes, or

coagulable lymph, as it is called, on the inner surface of the trachea, occasionally extending into the bronchial ramifications.

SYMPTOMS OF CROUP.

The characteristic symptoms of this affection, are principally these :—1. The patient makes a shrill sound on inspiration, and this sound is sometimes so loud and peculiar, that you can recognize it as soon as you enter the house, although the patient should be in a distant apartment.

2. There is a barking, crowing, or brazen kind of noise on coughing.

3. The respiration is much more laborious than natural. CULLEN has mentioned, that there is no difficulty in deglutition; but there are exceptions to this remark. Sometimes, the tonsils become first inflamed, and the inflammation spreads downwards into the pharynx, as well as the larynx, and the deglutition is painful. You cannot say, that because one of these parts is inflamed, that the others shall not become so; but you must take the symptoms as you find them at the bed-side of the sick. The heat of the surface, when not accompanied by the bronchial affection is higher than in the more intense forms of laryngitis, and the pulse is firmer and rapid.

In this affection as in the former, for they are both modifications of the same complaint, the patient is liable to sudden spasmodic attacks of difficulty of breathing; particularly in that denominated laryngitis. These attacks arise from the inflammation of the mucous membrane operating as an irritant on the muscles of the larynx, or rather on the nerves by which they are supplied.

Sometimes, however, a spasmodic affection of the larynx occasionally occurs without inflammation. It seldom happens in children after the period of dentition. An able friend of mine told me, that in all such cases, which he had examined after death, he found marks of inflammation about the mucous membrane of the lower part of the ileum, which is a remarkable fact.

TREATMENT OF INFLAMMATION OF THE MUCOUS MEMBRANE OF THE LARYNX, AND OF CYNANCHE TRACHEALIS, OR CROUP.

The more intense form of inflammation of the larynx is one of the most dangerous affections which take place in the human body. I have seen one case which ran its fatal course in seven hours; and another, in eight hours. It is often mortal in twenty-four or forty-eight hours, and proves so, usually, by closing the rima glottidis, either through inflammation or consequent spasm. Bleeding, in general, has less power over this than most other acute inflammations. A medical practitioner once requested me to see his man-servant, from whom he had drawn an immense quantity of blood, thrice in rapid succession, and yet it had made no decidedly favourable impression on this affection; and I have seen similar examples. Dr. BAILLIE published two cases, in which he declared that bleeding does no good in this disorder. But I cannot subscribe to this opinion as a general one. Blood-letting carried to faintness is often an useful auxiliary, though of itself it will rarely remove acute or sub-acute laryngial inflammation. The cure depends on a combination of measures. After blood-letting, promptly and decisively employed, an emetic of the tartrate of antimony seems to me to exert a greater influence on this affection than any other remedy. A female, who had not been effectually relieved by venesection, was at last on the point of suffocation; but on the operation of an emetic, she spoke distinctly and breathed with comparitive freedom; indeed, rapidly recovered. Other cases of the same kind have fallen under my observation. The emetic should be repeated whenever the breathing becomes difficult, and a degree of nausea should be maintained for some time afterwards. Purgatives are of great benefit as secondary measures, when they operate freely every day, and when at the same time the skin is kept moist. A simultaneous action on the bowels and skin is very beneficial in all inflammatory affections in the mucous membranes of the air passages. By operating on one organ we frequently relieve another. The tepid bath, rightly managed so as to excite per-

spiration, is an advantageous measure in such cases. The inhalation of the vapour of hot water is generally comfortable to the patient, tending to allay irritation and spasm in the larynx, while it also promotes an increased secretion from the part. Blisters applied to the nape of the neck, or to the sternum, are of some service. A spontaneous running at the nose gave extraordinary relief in two cases, a fact which might suggest the propriety of establishing a similar drain topically. When the violence of the inflammation has been subdued, and the patient is harassed by a dry ineffectual cough, full doses of opium are very useful. The patient perhaps coughs again and again through the night, and expectorates nothing, and the irritation consequent upon these efforts maintains or increases the inflammation; but all such mischief is often prevented by the soothing influence of opium.

When a chronic inflammation of the larynx supervenes an acute or sub-acute one, it is apt to be followed by ulceration, unless controlled by nauseants, a bland diet, a regulated temperature, and an open state of bowels, with gentle diaphoresis. Male convalescent patients are apt to have relapses if they expose the bare neck, which ought always to be covered by a cravat, for some time even after recovery. Upon the whole, males are more liable to this affection than females, because, perhaps, in the former the larynx is more predisposed by the external throat being sometimes covered and sometimes exposed.

If I should meet with another acute case of laryngitis, I shall sicken the patient with colchicum, after the employment of an antimonial emetic; for colchicum has had, thus used, a more decided effect in arresting rapid inflammations than any other remedy. One gentleman whom I know was saved by this universal relaxative; and the same effect has been induced by a tobacco injection, when every other means had previously failed.

The treatment of croup is similar to that of laryngitis. Bloodletting, emetics, purgatives, blistering, a spare diet, rest, and a regulated temperature, will rarely fail in removing it when early applied. Calomel has been supposed to exert a specific power over croup, in preventing the deposition of lymph; but it seldom relieves unless it acts plentifully on the bowels, though I believe,

that in protracted cases ptyalism has sometimes been beneficial. Some of my friends have found colchicum eminently useful when continued with the purgatives; but recollect, that it ought to be wholly withdrawn as soon as it creates any degree of sickness.

LECTURE XIII.

BRONCHITIS.

THIS inflammation has been designated by different names; by the old writers it was called *Peripneumonia notha*, when acute, and when chronic in old persons the *Catarrhus senilis*, or Humeral Asthma. Yet whatever changes may be rung upon such words, there is an intimate connexion between the acute and chronic forms, which very frequently pass or repass to each other. It frequently happens that an acute inflammation supervenes on a long standing chronic one of the bronchial lining. For example, an old man may go about coughing through the summer and autumn nearly all the day long and expectorating freely; but when the winter comes he is seized with an inflammation of a more acute kind, and if not attentively watched, might sink under its influence. In the investigation of such cases you should ascertain the following points, 1. The circumstances connected with the origin of the disorder; 2. The circumstances connected with the progress; and 3. The present state of that disorder.

It is a great mistake to suppose with some of the old writers that this disorder is confined to adults in a great measure. The truth is, that children are very liable to its attack. I before mentioned that the skin and mucous membranes of infants and children are remarkably delicate and predisposed to inflammation. This predisposition is frequently strengthened by an *heriditary* tendency, for the children of some families are more predisposed than those of others. The predisposition is sometimes such as I have before described under the title of *ætat.* Sometimes the predisposition is *sexual*;

the organs of the voice undergoing a remarkable change about the period of puberty, occasionally become predisposed at that period. Lastly, this tendency to inflammation of the mucous membranes of the air passages is *acquired*, through the influence of habits, operating from infancy, through the middle period of life, up to old age. In adults it often happens that irritation set up in the alimentary canal, with disordered functions of the skin, frequently predisposes to inflammation of this mucous membrane. There is a remarkable sympathy between the skin and internal mucous membranes. Debility is also a powerfully predisposing cause.

EXCITING CAUSES OF BRONCHITIS.

With respect to the exciting causes of bronchitis, the principal one is a low or variable temperature of atmosphere. It prevails most in low damp weather. Sometimes the cause is *epidemic*, a certain state of *atmosphere* extending over a certain district; or it may be *endemic*, confining its influence to a particular spot, or even to a particular house. Wherever you find the general or local taints of atmosphere, the mucous membranes are the parts which become affected when fever arises. The same applies to contagion generated in the human body, which being given off from one is very liable to affect another in the same manner, chiefly operating on the internal mucous membranes. There is greater prostration of strength generally attendant on bronchitis arising from an epidemic state of the atmosphere than when it arises from a low and variable temperature of the atmosphere, or in other words, a common cause.

SYMPTOMS OF COMMON BRONCHITIS.

I would premise that you must distinguish this inflammation from inflammation of the substance of the lung and pleura, for the treatment, in some respects, is remarkably different. Structure modifies very much the pathology of diseases, and consequently their treatment.

The symptoms which you must attend to combinedly, as the most characteristic of common bronchitis, are acute or sub-acute.

There is, 1. More or less disturbance in the respiration. The number of respirations in the healthy adult ranges from 16 to 20 in a minute. In acute or sub-acute bronchitis the number is often from 30 to 40. The number is not only greater than natural, but the respiration is also more laborious than natural, the inspirations and expirations are made with a more obvious effort, the chest heaving up and down much more than in the healthy condition.

2. There is more or less mucus in the bronchial passages. If you direct the patient to take a deep inspiration, and if you hold your ear close to his mouth, you will hear a guggling, wheezing, rattling, or purring noise, and that noise appears very deeply seated, as if occasioned by the air passing through the mucus in the bronchial passages themselves. If you direct the patient to cough, you can hear the same noise still more distinctly, deep and stuffing. If you apply the instrument of LAENNEC, you will hear a diffused, mucus, loose sort of guggle.

There is a cough attended by that loose, diffused, mucous, deep, stuffing noise above mentioned. The quantity of mucus is sometimes exceedingly great, and the patient struggles with an occasional, feeble, and ineffectual cough, while in the worst cases the cough is entirely absent, the patient being so weak that he cannot cough at all, and then the breathing is short and frequent. When a patient has a deep sweeping cough he is not in so much danger, for then he is able to expel the mucus from the air passages, the great accumulation of which produces suffocation.

4. Symptom is the expectoration. But recollect that I am now giving the symptoms which are the most frequent in common bronchitis. There is an expectoration of mucus or of a muco-purulent fluid. In the slighter cases the mucus is transparent or mixed with froth. In the severe cases it is opaque, and often appears in yellow broad patches. When these patches are expectorated into a vessel they run together, being in consistence somewhat like the white and yolk of an egg, mixed together by a spoon, but in appearance more like the mucilage of gum arabic. The danger or the safety of the patient turns upon the balance between the quantity of mucus secreted, and the quantity of

mucus expectorated. If the quantity secreted be greater than what is expectorated, than the danger is greater: but if the patient have a deep sweeping cough, then the danger is less. But in the very worst cases the cough is effectual as to the expulsion of mucus.

5. There is a leaden, or violet, or purple colour of the lips. The cause of this is the accumulation of the mucus in the air passages preventing the decarbonization or oxygenation of the blood in the lungs, and consequently, a darker coloured blood circulates throughout the body, and is most observable in the capillary vessels of the lip and cheek.

6. There is a purplish line of the cheek, or a pallidity mixed with livor. If the countenance were florid in health, it will be purplish in this affection; but if the face were pale in health, there will be a paleness mixed up with the livor, or leaden sort of pallidity. It is very remarkably displayed in infants, for when they are attacked with bronchitis, the paleness and livor are always blended together on the cheek, for you know their cheeks are blanched in health. Sometimes this appearance is to be found in other parts of the body, but most frequently in the lip and cheek. But when arterial blood becomes impeded in its circulation in health, it assumes the venous character, thus you may see many persons who have a purplish colour of the hands and face when exposed to a low temperature without a bronchial affection.

7. The heat is generally moderate on the surface of the body, but sometimes high, especially in children.

8. Compared with that attendant on inflammation of serous membranes, the pulse is soft. But if the heat be high on the surface, the pulse is generally expanded and quick; but if the heat of the surface be moderate or low, the pulse is almost always soft and compressible.

9. There is considerable prostration of the muscular power, and this prostration is greatest when the accumulation of mucus in the bronchial passages is greatest.

10. There is, in the progress of most cases, heaviness, aching, or giddiness in the head. Now if you remember the combination of symptoms which I have now pointed out, you need never be at a loss to distinguish common bronchitis, in which

also there is an absence of pain, even on deep inspiration. There are two ways in which the brain may be influenced in bronchitis, mechanically and chemically. But there is another mode in which the brain becomes implicated in this affection, it is by the excitement of the heart's action in coughing. Again, you must also recollect, that the pain influences very materially the lungs through the medium of the eighth pair of nerves; and this fact affords a strong argument in favour of the nerves being the conductors of some subtle fluid, as conjectured by Galen. But whenever the lungs become embarrassed, the heart participates very soon, the blood being impeded in its transmission from the right ventricle.

Death occurs in the same way, in inflammation of the mucous membrane of the bronchia, as it does in drowning, but more slowly. Some of these cases, in the extreme form, however, are very sudden. An old man goes out in a cold winter's day, he is seized with a difficulty of breathing, falls into a state of torpor, and dies, perhaps without having any cough at all, in twenty-four hours. An infant is taken out in a very cold day in the nurse's arms, and is chilled; the lips become purple, leaden, or violet, the cheek pallid and leaden in its hue, and the child dies in a very short time. Generally speaking, the cases are certainly more protracted, continuing for one, two, and sometimes three weeks, or even longer. I have examined the bodies of several patients who died from this affection, and in all the most decided evidences of inflammation of the mucous membrane of the bronchia were found, quite sufficient indeed to account for the death.

MORBID ANATOMY.

On laying open the chest, a man unacquainted with pathological anatomy, would say, there are no signs of inflammation here, nothing peculiar. Nevertheless there are many morbid changes to be found by those who know where to seek for them. The right side of the heart and large adjacent vessels are generally much gorged. The blood sometimes remains a fluid gore, and does not coagulate, from the change which it has undergone

in its constitution. Having examined the state of the heart and large vessels, you should next examine the bronchial membrane itself, the surface of which is covered with mucus accumulated, and if you wipe that off by a sponge, you will find the membrane highly injected, and generally a dark colour, which soon becomes more red on being exposed to the air when the mucous secretion is removed. The substance of the lung itself is gorged with venous and arterial blood. If you press the end of the finger upon the part most affected, a pit will follow the impression. If you slice the portion of lung, and squeeze the divided portions, a mucus, or muco-purulent fluid will issue out from the cut surfaces, similar to that contained in the bronchial passages. The brain is generally found more or less congested, and in many cases, you will find traces of inflammation on the mucous lining of the small intestines.

DIAGNOSTIC SYMPTOMS.

If you attend to the following observations you may distinguish inflammation of the bronchial membrane from inflammation of the substance of the lung, or of the pleura. *First*, the *Cough:* the sound accompanying coughs is very remarkably different. In the most intense form of inflammation of the larynx, the patient, when he attempts to cough, makes a low, grumbling, grunting, suffocating noise. In *Croup*, when the inflammation is seated in the membrane lining the trachea and some parts of the larynx, there is a harsh, brazen, clanging cough. Whereas in *Bronchitis*, you have a loose, deep, diffused, stuffing cough, having the peculiar sound which LAENNEC has called the *Mucous guggle*. Again in inflammation of the substance of the lungs, the cough is entirely different; it is a harsh shrill, metallic sort of noise, deep within the chest, limited to the inflamed portion of lung. In inflammation of the *pleura*, the cough is hard, short, and generally dry at first. Therefore from the nature of the cough alone, I should say that a man of minute observation might tell whether the inflammation were seated in the larynx, trachea, bronchial membrane, lungs, or pleura.

The *second* point to attend to is the *Expectoration.* The quantity and kind of expectoration will be found to be remarkably different in these different affections. When patients do expectorate in bronchitis, the expectoration is loose, mucilaginous, and copious. In inflammation of the substance of the lungs, it is very scanty and tenacious; spit up in small patches, almost like glue. In pleuritis there is generally no expectoration at all, or it is scanty, transparent and somewhat frothy.

The *third* guide to be noticed at the attack and progress of common bronchitis, is the purring, wheezing, rattling noise, which you may detect either on hearing the patient cough or by applying the instrument of LAENNEC. In the *fourth* place, the colour of the lips and cheek undergo a change, more remarkable in the onset of this affection than in the onset of inflammation of the pleura or lungs. *Fifthly*, the absence of pain on a deep inspiration. In pure bronchitis the patient can take the deepest inspiration without feeling any pain, but in general he cannot do so in inflammation of the substance of the lungs or pleura. The prostration of strength in bronchitis is also generally more marked in the beginning, and the head is more apt to be affected in its progress. If I am at all right in my remarks, it is of the utmost importance to distinguish bronchitis from inflammation of the substance of the lung and pleura. Judging from the results of my own experience and from the results of the practice of those who adopt the same treatment in bronchitis as they do in pnuemonia or pleuritis, I would say, that the want of such discrimination often causes the loss of life. CULLEN, who paid but little attention to morbid anatomy, has mixed up the symptoms of inflammation of the lungs with the symptoms of bronchitis.

TREATMENT OF BRONCHITIS.

Blood-letting, you would suppose, is the principal remedy, but if you were called to a patient labouring under bronchitis, and were to proceed on the broad principle, that the affection is inflammatory, and, therefore, required copious or repeated bleeding, you would be extremely unsuccessful in your practice. I have been called to a great many patients who, having been thus bled,

sunk with great rapidity after the operation. As I shall feel it necessary to recommend the prompt and decisive use of the lancet in some inflammatory affections, so I now consider it incumbent to caution you against its indiscriminate employment, especially as the junior members of the profession are apt to be taken by a bold practice. But though there are some cases which require such a practice, there are others in which two, or three, or four ounces of blood would answer far better; and some again in which the abstraction of this small quantity would do harm. Learn to vary the treatment according to the existing circumstances.

Bronchitis is one of the affections which demands the greatest discrimination as to the use of blood-letting. If you were to bleed an infant, or an aged person, labouring under this affection to approaching syncope, he would rarely recover.

The *rule* for bleeding in bronchitis, which I have deduced from observation, is this:—if the heat be high on the surface of the body, and the pulse full and expanded, or contracted and resisting, you may bleed *moderately* with advantage at the outset of the affection. But if, on the other hand, the heat on the surface be not high, and the pulse at the same time is soft and compressible, do not bleed at all. When blood letting is carried to a great extent, prostration of strength follows; the muscles employed in respiration cannot perform their functions, and the patient sinks speedily from an accumulation of mucus in the bronchia.

It appears that inflammation of the mucous membrane of the bronchia generally has a determinate duration. You may at once stop the progress of inflammation in serous membranes by blood-letting and other active means, but not so in inflammation of the mucous membranes. This inflammation, generally, has a certain duration; and in common bronchitis all the good that you can do by blood-letting is to lessen its violence, for its natural cure is the secretion and expectoration of mucus. For want of considering this simple fact, namely, that inflammations of the mucous membranes mostly have a determinate duration, I have witnessed the most disastrous results; I have known patients bled day after day till they sank rather from the influence of the measures than

from the disorder. If an infant requires bleeding in this affection you must employ leeches, but in applying them, be sure to avoid exposure of the chest, which always aggravates the bronchial affection considerably.

The *second* measure in the treatment of this affection, is the exhibition of *aperients*. It is a very curious law in the animal body, that a disorder seated in one part, may be removed by operating on another and distant part. To illustrate this influence I will mention the following case:—I saw a lady, soon after her delivery, for a very slight complaint; she merely had a superabundance of milk; but she was attacked with a prevailing disorder, a purging of mucus, streaked with blood, and the secretion from the breasts immediately ceased. There is also a very intimate connexion or sympathy between the skin and kidneys; when the functions of the one becomes impaired, the other appears to supply the deficiency by an increased secretion; I might mention to you, as a proof of this, a case of *diabetes* which lately fell under my notice: a patient passed about nine quarts of urine in the course of the day, I recommended the use of the vapour bath, removed some causes of irritation to the mucous membrane of the stomach and bowels, and afterwards ordered a bland animal diet, and in about a week the quantity voided was reduced to two quarts, chiefly however through the influence of the vapour bath.

No medicines have so decided an effect, in the removal of bronchitis, as those which act simultaneously on the bowels and skin. You should give cold drawn-castor oil, an infusion of senna, with small doses of the sulphate of magnesia and colchicum. Whilst the heat is high on the surface of the body, you may usually give such a draught as the following, two or three times in the day with great benefit:

Infusion of Senna	℥iss.
Sulphate of Magnesia	℥i.
Manna	℥i.
Powdered Colchicum	gr. v.

When, however, the heat is not high on the skin, then small doses of calomel, with rhubarb, followed by cold-drawn castor oil,

will be the best medicines, omitting the calomel when the fever abates, lest ptyalism be induced. A third means is the exhibition of *diaphoretics*, among the best of which are tepid drinks, and a regulated temperature. The temperature of the room should never be lower than 60, or higher than 66. Never produce sweating by a high temperature; for, if you do, the superfluous heat will occasion more mischief than the perspiration can probably counteract. A high temperature excites the heart's action, and increases thereby the original malady. Give, for the purpose of soliciting the secretion from the skin, some such medicines as the following: about two drachms of the liquor ammoniæ acetatis, and five drops of the antimonial wine, with two, three, or four drops of laudanum every four, five, or six hours. When these do not succeed, the tepid bath, provided the patient be not too weak, is an excellent auxiliary. Some are in the habit of giving nauseating medicines, and certainly they sometimes appear to do good by promoting expectoration and perspiration; but when individuals, whether old or young, have to struggle a long time with disease, you must keep their stomachs in good order.

A *fourth* thing to be observed is, that the patient should be kept perfectly at rest in bed. This position calms the pulse, and the uniform temperature produced by the bed-clothing acts very favourably on the skin, increasing at all events the insensible perspiration, indeed often causing diaphoresis.

Fifthly, the diet should be bland and spare, especially whilst the heat of the skin is higher than natural, and the pulse expanded. But do not carry your spare diet too far, for if you abstract all stimulants from persons advanced in life, who have been accustomed to them, you will generally be unsuccessful.

Sixthly, the application of a small blister is sometimes useful, But you must be very careful how you apply blisters when the strength is much broken up, especially to young children, who have sensitive skins. I have seen many instances where children have been lost by the sloughing and irritation occasioned by a blister. You should generally avoid blisters in the fever of infancy for the above reason.

In the *seventh* place, stimulants are now and then necessary.

It sometimes happens, in the progress of bronchitis, that the patient becomes exceedingly weak, the skin cool, the head grows more and more heavy, the chin at last drops upon the breast, he rattles more in his breathing, and he expectorates less and less. A little *carbonate of ammonia*, given repeatedly in some almond milk, will frequently in such cases save the patient's life. Small quantities of æther, or, upon an emergency, small doses of hot wine and water will answer the same ends. The danger in this affection is from the accumulation of mucus, and if the patient be able to expectorate, and if you do not do too much, he will generally get well, by rest, regulated temperature, spare diet, or gentle action on the bowels and skin at the same time. Never forget that this affection has a determinate duration.

Persons who have had attacks of bronchitis are very apt to have relapses, and therefore in infants and old persons particularly, you should, to their relations, clearly explain the remote occasions, that future attacks, if possible, might be prevented. Bronchitis is an affection which very often attacks infants and children; yet if any one were to tell certain professors or censors of the good old school, that peripneumonia notha was very common in infancy or childhood, they certainly would reject him as unworthy of their honours.

I have now given you a view of bronchitis arising from *common* causes only, but it admits of a much wider pathological and practical application. If a person have an extensive burn, or compound fracture, and die; or if he undergo a capital operation, and die soon afterwards, you will very frequently find, if you attend to the symptoms and morbid appearances, that he died partly from a supervening bronchitis. The erysipelas of hospitals generally terminates fatally from the occurrence of internal inflammation, and that internal inflammation is always seated in the bronchia, whatever parts else may suffer; at least, I have never seen a body examined after death in which this was not the case. When this affection follows burns, compound fractures, and so on, the accompanying fever mostly assumes a typhoid character, especially if the patient breathe a close or tainted air; for the mucous secretion prevents the decar-

bonization of the blood. The quantity expectorated is not in proportion to the quantity of mucus secreted. There is, at the same time, in typhoid and typhous fevers, a sticky kind of varnish secreted which prevents the proper changes of the blood in the lungs, more from its constitution than its quantity, which indeed is less than in common bronchitis. All low, putrid, malignant, typhous, or adynamic fevers, as the French now call them, principally owe their peculiarity of the low, putrid, or malignant type from the presence of a special bronchitis, attended by a low degree of heat, a soft pulse, a brown varnished tongue, and an injected state of the bronchial lining, which is so besmeared by an adhesive secretion, that the blood does not undergo the natural change. I have ascertained this fact from repeated dissections, a fact which is not well understood in this and other countries.

LECTURE XIV.

INFLAMMATION OF THE LUNGS, PLEURA, AND PERICARDIUM.

THE *tendency* to inflammation of the lungs, pleura, or pericardium, is sometimes hereditary, sometimes acquired. It is a very remarkable circumstance, in regard to inflammation of the pericardium, that it is very apt to occur in those families, the members of which are liable to rheumatic affections, and such individuals are also apt to have enlargements of the heart. If the lungs, pleura, or pericardium have been once inflamed, there is generally a liability to the same disorder.

The most common *exciting* cause of inflammation of the lungs, pleura, and pericardium, is a low, or variable temperature. The inflammations prevail most in cold dry weather, but sometimes in cold moist weather. An attack of inflammation in the lungs or pleura may be excited by a current of cold air. If an individual chance to be chilled by exposure to rain, or the like; or if cold be applied partially, especially to the chest and feet, it often happens that the whole surface becomes cold, re-action

takes place, and, if predisposed, inflammation of the lungs or pleura takes place. If any one be wet while he is walking, he should keep in motion, by way of maintaining the animal heat, and thus preventing a chill, and subsequent inflammation; but in such a state he should always change his clothes as soon as possible; where the surface has become cool, the sooner he uses a tepid salt bath the better; it is an excellent preventive of inflammation. Persons may contract inflammation of the pleura, lungs, or pericardium, by sleeping in damp sheets, so commonly used in some inns; and therefore it is a good rule, in travelling, always to sleep between blankets. Sometimes a sudden plunge into a cold bath produces inflammation of the lungs or pleura. The reason why these inflammations occur so frequently, when the surface it chilled, appears to be this: that there is a much freer anastomosis between the vessels on the external and internal parts of the chest than in any parts of the body, so that when the external surface is chilled there is an accumulation of blood internally, and the pleura, lungs, or pericardium, become inflamed. It is therefore a great point, in those individuals who are predisposed to inflammation, to keep the chest well covered by proper clothing; next to this in efficacy, I should mention the daily use of a shower bath, or sponging the surface of the body with cold water, which seems particularly to prevent the occurrence of inflammation of the lungs.

When inflammation arises from cold, it arises indirectly, after the establishmeut of re-action; sometimes, however, the pain in the chest is complained of during the cold stage, from the congested condition of the lungs or their appendages. Sometimes these inflammations arise from impressions made on the mind. Two cases of this kind occurred in the hospital. Two women were recovering from a fever; they were frightened by a violent thunder storm, became chilled, and had inflammation of the lungs. I have known this affection also arise from cramming the stomach with indigestible food. An old nurse, in the hospital, one day crammed herself excessively with pickled pork; her whole surface became cold, and her lungs, after the re-action had been established, became inflamed; her lungs had suffered inflam-

mation before, and were thereby predisposed. Sometimes it arises from a very high temperature increasing the heart's action, which afterwards operates on the lungs, pleura, and pericardium. Sometimes it arises directly from a local irritation, as a broken rib rubbing upon the pleura; therefore, when you are called to a patient complaining of tenderness, and especially if there be swelling on the side of the chest after a fall or accident, you should make a point of examining the ribs carefully from the sternum to the spine. Occasionally inflammation of the lungs arises from a very remote irritation; I remember the case of an old gentleman, who received an injury on his shin, which was followed by inflammation there; it disturbed the nervous system generally and increased the heart's action, and, during the progress of the fever, the lungs became inflamed. It is in this way that operations frequently prove fatal, by subsequent inflammations arising in weak parts. Indeed, no man is qualified to practise surgery unless he understand accurately the pathology of the internal structures, and unless he know how to treat such affections when they arise.

SYMPTOMS OF INFLAMMATION OF THE LUNGS AND PLEURA.

We have a number of cramp words to express these affections. Peripnumonia notha is an inflammation of the mucous membrane lining the bronchial passages. *Pneumonia* expresses inflammation of the substance of the lungs, and *peripneumonia*, without the adjective *notha*, expresses the same thing; they are in fact synonymous words. Pleuroperipneumonia is a term frequently used to express inflammation of the pleura and lungs, while *pleuritis* expresses that of the pleura.

If you attend to the following symptoms you will be enabled to know when the *substance* of the *lungs* is acutely or sub-acutely inflamed, or, what is technically termed *pneumonia*, or peripneumonia.

1. The breathing is more or less difficult. The number of respirations considerably exceed twenty in a minute, and the inspirations and expirations are made with more labour of the whole chest than natural.

2. There is a sense of confinement or stricture in the chest.

3. There is a deep dull pain in the lungs, generally in the middle, or at the lower part of the thorax, because the middle and lower parts of the lungs are most liable to common inflammation, and the upper part of the lungs seems more liable to tubercular affections. The patient generally lies on the affected side ; but there are some exceptions to this : most frequently the patient requires his trunk to be elevated, and he lies on his back.

4. There is a cough, attended by a limited, harsh, grating noise ; you must remember that, because it is a diagnostic sign. It is almost a metallic noise, and the reason why it attends inflammation of the substance of the lungs is this : the bronchial passages are drier than natural, and the sound is attached, as it were, to particular parts of the lung. The cough increases the pain, and also a deep inspiration. Coughing increases the pain on the same principle that a deep inspiration does. A cough is nothing more than a very deep inspiration, followed by a stronger expiration than natural.

5. There is a scanty, viscid, yellowish, or greenish expectoration. The sputa are got up with very great difficulty, and when the patient spits into a vessel, the patch expectorated is so tenaceous that it adheres closely to the sides of the vessel.

6. The pulse is struggling, or oppressed. You must be very much on your guard respecting the pulse in inflammation of the lungs, for I have known the pulse not more than 60 or 70 in a minute, and yet the patient laboured under an intense form of inflammation.

7. Respecting the heat of the skin, also, you should be very much on your guard, for in many cases it is but little above the natural standard, especially in lean habits.

8. The tongue is generally moist, and not much loaded with fur, except where the stomach is simultaneously disturbed.

A remission of the symptoms sometimes takes place. The pulse becomes softer, the heat of the skin falls, the breathing becomes more easy, the cough less troublesome ; and you might imagine the patient to be getting well. But be very careful of the

patient at this juncture, for it occasionally happens that it is succeeded by a more aggravated attack.

There is one exception to the state of the tongue, which I have mentioned in the inflammation of the substance of the lung, it is in the typhoid pneumonia, or the *pneumonia typhoides.* But, in truth, it is an inflammation of the lungs, combined with a special one of the bronchial lining, which is then covered with a sticky varnish. Whenever you observe the tongue glazed, dry, and brown, at the same time, be very cautious about using evacuations, even when the substance of the lung is inflamed. If you carry evacuation far in such complex cases, the patients will generally die. Inflammation of the lungs may be either acute or sub-acute ; when acute, there is more respiratory and general disturbance, it runs a more rapid course, and sometimes terminating in a week, while the sub-acute often extends to 14 or 21 days.

SYMPTOMS OF INFLAMMATION OF THE PLEURA.

1. There is a pain, or stitch, in the side, which interrupts, every now and then, the breath.

2. The breathing is difficult, but not so heavy and oppressed, in the first instance, as in inflammation of the lungs.

3. There is a catch, or cough ; more often the latter. The cough is at first hard and dry, and when expectoration does take place, it is only a thin mucus mixed with some froth. The expectoration is entirely different from that which is found in inflammation of the lungs.

4. The pulse is quicker and harder than it is in inflammation of the substance of the lungs. It is a pulse which feels like a piece of whipcord under the fingers, and is a characteristic generally of inflammation of the serous membranes.

5. The heat of the skin is higher than in inflammation of the lungs, especially on the integuments covering the chest; over which there is often some tenderness, on pressure, at the same time. The tongue is generally more furred than when the lung is inflamed, because the fever is more decidedly developed. The urine is more scanty and more turbid than

in inflammation of the lungs, and this is generally the case when the serous membranes are inflamed. There is an exception to this in the mucous membrane of the large intestines, for when it is inflamed the urine is scanty and turbid, I have occasionally evaporated the urine attendant on inflammation of the serous membranes, and mostly found it to contain a larger portion of *urea* than natural. It appears that there is often a larger quantity of urea circulating in the blood than can be carried off by the kidneys. I am inclined to think that some cases of extreme irritation of the human body are kept up by a morbid condition of the fluids, and that the superabundance of urea is one of these causes.

Inflammation of the pleura sometimes spreads to the substance of the lungs. It, by far, more frequently happens than that of inflammation of the lungs spreading to the pleura. Inflammation of the substance of the lung sometimes takes place in bronchitis, and then, of course, there is a combination of symptoms.

You may know inflammation of the substance of the lung, and that of the pleura, is advancing, by the following symptoms :—

1. The dyspnœa continues and increases ; the auxiliary muscles of respiration act more and more ; and the motions of the muscles of the neck and alæ nasi being more and more augmented. 2. There is increased action of the diaphragm and abdominal muscles. 3. There is less air taken in and given out, as the inflammation advances. 4. The number of respirations become greater and greater—they are perhaps 30, and increase to 60 before death. 5. The cough becomes weaker and weaker ; the patient coughs at first with great strength, and as the disorder goes on his cough grows more feeble. 6. The expectoration lessens, while the rattling noise increases. This rattling noise appears to come nearer and nearer to the ear when you put it to the patient's mouth ; and it arises from an effusion of mucus or serum into the bronchial passages, reaching at last almost up to the trachea. 7. The pulse gets quicker and weaker. 8. The heat of the skin becomes lower, whilst the skin itself becomes damp and relaxed. 9. The lips and cheeks grow more and more livid. 10. The

countenance becomes more and more anxious; and, 11. An universal collapse takes place, in which the patient expires.

MORBID APPEARANCES OF INFLAMMATION OF THE SUBSTANCE OF THE LUNGS.

The best account which I have seen of the morbid appearances of the viscera of the thorax, that which most nearly corresponds to my own observation, you will find in LAENNEC'S work on the diseases of the heart and lungs.*—A work, which unquestionably, in a pathological point of view, is one of the most valuable which has appeared in modern times. There are three different stages of inflammation of the substance of the lungs. It may terminate, first, in an effusion of serum; secondly, in an effusion of adhesive matter; or thirdly, in an effusion of pus; and frequently you may discover a combination of these three stages in different parts of the lung. When it terminates fatally in the first stage, you find that portion of the lung which is inflamed, excessively gorged with blood, both venous and arterial; so that, on slicing it across, a bloody serum follows the knife very copiously. If you examine minutely a portion of the divided lung, you will find that it still retains, to a considerable extent, its natural spongy structure. Sometimes, inflammation of the lung advances to the second stage, and that state of the lung is produced which has been called *hepatization*. The substance of the lung is so condensed by the inflammation,—by the effusion of adhesive matter, that it resembles a piece of liver in its structure. If you cut it, you find that scarcely any fluid oozes from it; but you can scrape a little fluid from it with the edge of the knife; and if you examine the cut surface with a microscope, you will see that it has a

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* *De l'Auscultation Médiate, ou Traité du diagnostic des Maladies des pneumons et du cœur, fondé principalement sur ci nouveau moyen d'exploration. Par R. T. H, Laennec.* This celebrated work translated into English by Dr. Forbes, has reached a 4th edition, 1834.—Portwine.

granulated appearance. But when a patient dies in the third stage of inflammation of the lung, the cellular membrane of the inflamed part is filled with pus ; there is, to use the strong expression of LAENNEC, an *infiltration* of pus, the true common suppuration of the lungs. In the first stage, the effusion is simple,—it is a bloody serum which is effused; in the second stage, coagulable lymph is effused ; and in the third stage, there is an effusion of pus into the cellular connecting medium of the lung. LAENNEC has examined many hundred cases, but he found very few abscesses ; and I have seen many cases of inflammation of the lung, which had terminated fatally ; but, though I found the proportion of common circumscribed abscess greater than LAENNEC, yet I am convinced, that it is not a common occurrence, as is imagined by those who follow speculative authorities instead of nature. The mistake has arisen from careless observers having confounded tubercular vomica with common abscess of the lung.

MORBID APPEARANCES OF INFLAMMATION OF THE PLEURA.

On examining the pleura after death, you find red lines running in various directions, or red patches scattered over the surface of the pleura, like blushes of inflammation, if I may use the expression. It has been said by anatomists of this country that the pleura is thickened by inflammation, but I believe that LAENNEC is correct on this point, when he says that what appears to be a thickening of the pleura is only an effusion of coagulable lymph upon its surface. There is, in intense forms of inflammation of the pleura, an effusion of coagulable lymph, both on the surface of the pleura costalis and of the pleura pulmonalis. This occurs in strong subjects, but in weak subjects there is a copious effusion of serum, and less and looser coagulable lymph. The matter effused resembles the curds of milk, floating in whey. The whole effusion has a purulent appearance ; an appearance however most frequently borrowed from the lymph effused into the serum. This appearance has given rise to a supposition, very common even in the present day, that it was a collection of genuine pus bursting from the lungs into the bags of the pleura,

and it was called *empyema*, which however is nothing, generally speaking, but the effusion of the serum coloured by flakes of coagulable lymph. My object is by every possible effort to reach the truth; and if error lie in my way, I must touch it—tear it—trample it under my feet.

Serum is often effused between the two surfaces of the pleura pulmonalis and pleura costalis, and being absorbed, the effused lymph becomes organized, and gradually glues the two parts together. If these adhesions be recent, you can easily separate them with the fingers; but if they be old, the result of previous inflammation, you cannot separate them without very considerble force. Sometimes there is considerable effusion into one bag of the pleura, so that, even before death, you can distinguish that side of the chest to be very much enlarged and you find, on examination, the lung compressed as it were into a corner, more resembling muscle than lung in its structure. Occasionally there is a contraction of one side of the chest, where the function of the lung has been destroyed by inflammation, and where a sort of fibro-cartilaginous effusion has so covered and pressed the lung as to prevent it from rebounding and filling the chest again on that side, as explained by LAENNEC.

DIAGNOSIS OF BRONCHITIS, PNEUMONIA, AND PLEURITIS.

You might by a superficial consideration of these affections confound them with each other, but by minute attention, you will be able to distinguish them from each other.

1. With respect to the *pain*.—In pure *bronchitis*, there is no pain, the patient can make a full inspiration and expiration without pain; but in *pneumonia* there is almost always a dull pain in the chest. In *pleuritis*, there is a distinct pain, attended every now and then by a *catch* in the breathing.

2. The *cough* is different in bronchitis, pneumonia, and pleuritis.—In *bronchitis*, the cough is a loose, deep, diffused, stuffing noise. In *pneumonia*, it is harsh, shrill, metallic, and grating. In *pleurisy*, it is a hard, dry cough; the noise resembling neither of the two former.

3. The *expectoration* is different in each.—In *bronchitis*, it is

copious and loose, spit up in large patches, which afterwards run together. In *pneumonia*, the expectoration is in small patches, got up with great difficulty, very tenacious, and of a yellowish or greenish hue. In pleuritis, the cough is at first dry, and when expectoration does commence, it is a glairy mucus, mixed with a little froth.

4. The *colour* of the *lips* and *cheeks*.—In *bronchitis* the cheeks and lips are more effected at the onset. They are purple, voilet, or leaden in colour, modified by the natural complexion in the way which I before explained.

5. The *pulse* is more compressible in bronchitis than it is in pneumonia, and more so in pneumonia than in pleuritis.

6. The *heat* of the skin is generally higher in *pleuritis* than in the two former affections.

7. The *breathing* is also different.—In bronchitis, the patient breathes with difficulty; but now and then he is relieved by a copious expectoration of mucus; in pneumonia, the breathing is more confined and heavy than in pleuritis; and in pleuritis it is interrupted frequently by a sudden cough or catch in the side.

There is another affection which you might confound with these, and therefore I shall speak of it here, it is *pericarditis*, the term is used indiscriminately with *caradits*, but the latter is a rare affection, whereas pericarditis is by no means uncommon. It more frequently arises in the progress of the rheumatism than in any other way, especially if persons affected by rheumatism be suddenly chilled.

DIAGNOSTICS OF PERICARDITIS.

What are the diagnostic symptoms of inflammation of the pericardium, or bag of the heart?

1. The seat of the pain:—the pain is directly in the region of the heart, increased on inspiration, by turning towards the left side, and stretching the trunk upwards and backwards.

2. The breathing is anxious and irregular rather than difficult.

3. The cough is slight in proportion to the anxiety and irregularity of the breathing.

4. Attend to the state of the pulse. All writers have agreed

in saying that the pulse is irregular in pericarditis; but, if I may trust to my own observation, I should say that the pulse is almost always regular when the patient is perfectly quiet, only becoming irregular when he moves.

5. The pulse is generally small, yet if you put your hand on the region of the heart, you find that its contractions are excessively strong. There is an inequality between the strength of the heart's action and the pulse; which induced LAENNEC, to suppose that the arteries had the power of carrying on the circulation somewhat independent of the heart.

6. A *tendency* to syncope on motion, not actual syncope under all circumstances.

7. A very solicitous and anxious expression of countenance.

MORBID APPEARANCES IN PERICARDITIS.

The heart is often coated, like a tripe, with a layer of adhesive matter. At other times there is an effusion of serum, with a less quantity of lymph. CORVISART relates cases in which both the pleura and pericardium were simultaneously inflamed; but the one may be considered a serous, and the other a fibrous membrane; and I have not found them frequently both inflamed in the same case. The thin transparent fluid, which is so often found in the pericardium, cannot be considered a morbid appearance, as it generally occurs during the agonies of death; and it may be readily distinguished from that which is the result of inflammation by its being a pure serum, and not containing any coagulable lymph.

PERCUSSION.

One of the methods which may be advantageously used to assist us in forming a correct diagnosis of the different diseases of the chest, is percussion. This can only be of use when you have acquired an accurate knowledge of the natural sound of various parts of the chest. The chest, or at least several parts of it, in a healthy condition, will, when struck by the ends of the fingers, emit distinct sounds, almost like those which are produced by striking an empty cask. Whereas, when disease has

taken place, the sound elicited by percussion is comparatively dull, as if a full cask had been struck. Great assistance may be derived from percussion, particularly when combined with the employment of LAENNEC'S instrument, which I have found of the greatest assistance in the diagnosis of affections of the lungs and heart.

THE APPLICATION OF THE STETHOSCOPE.

You know that an old Roman wished that a glass might be placed on his breast, in order that others might see what was passing within. What the old Roman wished to be done morally, LAENNEC has accomplished physically. By his persevering industry, he has discovered a scientific mode of exploring the affections of the chest through a simple instrument, which may be considered as one of the greatest boons presented to the medical world in modern times.

LAENNEC'S instrument can only be successfully applied to the diagnosis by him who will take the trouble to educate the ear, to ascertain not only the healthy sounds of the heart and lungs, but also the morbid ones, that the difference may be accurately detected. Nay, this is not all, he must connect those morbid sounds with the appearances displayed by dissections, that he may know the pathological conditions on which they depend. In bronchitis a mucous guggle is heard through the stethoscope; in pneumonia a crepitous or more shrilly sound, in the first stage; while in pleuritis, the respiratory murmur is either suddenly lost, over a large space, or there is that bleating kind of noise called hœgophonism. But for a more minute detail, I must refer you to Dr. FORBES'S very able translation of LAENNEC.

LECTURE XV.

TREATMENT OF PNEUMONIA AND PLEURITIS.

THE treatment of these affections differs, in some respects, essentially from the treatment of bronchitis. In bronchitis the greatest care is generally necessary as to the copious abstraction

of blood; so true is this remark, that many cases of bronchitis have proved fatal, where large quantities of blood have been rapidly drawn. Where the heat on the skin is high, and the pulse full and strong, or contracted and hard; and if the patient can cough out forcibly, you may abstract blood moderately, with advantage; on the contrary, where the pulse is not expanded and strong, but soft and compressible, where the heat is not high on the skin, and where the patient cannot cough forcibly out, too much caution cannot be observed in the abstraction of blood. In such cases I should rather say, adopt those measures which act gently on the bowels and skin; in conjunction with rest in the recumbent posture, a regulated temperature, and a bland diet.

A patient has a quick pulse, some heat of skin, a troublesome stuffing cough, difficulty of breathing; in fact, he labours under an acute or sub-acute form of bronchitis. The medical attendant thinks these symptoms may be relieved at once by blood-letting; accordingly, he bleeds largely to-day, but finding the symptoms still unsubdued, he bleeds again to-morrow, and even, perhaps, the next day, with a like result, till at last the patient sinks and dies. The truth is, that inflammation of the mucous membrane of the bronchia has a determinate duration, and the man who tries to remove it, day after day, by repeated blood-letting, attempts an impossibility, and always risks the patient's life.

Circumspection respecting blood-letting is more especially necessary when the tongue is glazed with a sticky varnish, dry and brown, for then copious evacuations are followed by more decided prostration, particularly if the pulse be soft and weak, and the heat low on the surface

There is also a great difference in the pathology of bronchitis, and in that of pneumonia and pleuritis; in pneumonia the effusion, which is the result of the inflammation, takes place into the cellular connecting membrane of the lungs. In pleuritis the effusion takes place into one or both bags of the pleura, and compresses the lungs. But in bronchitis there is an outlet for the effused mucus, and provided the quantity expectorated equals the

quantity secreted, there is little danger, if the practitioner do not interfere too much with his prescriptions. But there is no such outlet in pneumonia and pleuritis.

In inflammation seated in the substance of the lungs, or pleura, there is considerable danger, especially when that inflammation is acute; for then it runs a rapid course, so that the life of the patient depends, in a great measure, on the promptitude with which the practitioner applies his remedies. If the inflammation, either in the lung or pleura, be acute, we must operate, not only promptly, but powerfully; we must do all that we have to do in a very short period of time, otherwise we shall be unsuccessful. I may mention a case which will show the danger of delay. The patient laboured under pneumonia and pleuritis. He was taken ill early in the morning; about seven o'clock the symptoms were not remarkably urgent, he had a stitch in his side, a hot skin, a quick pulse, and a harsh, shrill, metallic kind of cough, with some difficulty of breathing. The surgeon not being present, and having to attend a consultation at a distance, I ordered a certain quantity of blood to be drawn. Shortly after my leaving, they sent for the general practitioner who attended the family; he was unfortunately from home, and his assistant came, and did not bleed the patient effectually; instead of taking away the quantity of blood ordered, he abstracted about an ounce and a half, and endeavoured to conceal his want of skill by saying that the blood was so putrid that they must throw it away, lest it should taint the house. When I returned at noon I found the patient in the most imminent danger. He was purple, gasped for breath, had a struggling pulse, and a frequent cough, interrupted by catching. This may serve to show you the importance of seeing your orders carried into effect. Never trust any important operation to proxy; do it yourself, or see it done. It is not the quantity of blood lost, but the effect produced. This patient was a very robust man. His father-in-law, a retired practitioner, happened to be then in the house. I told him that the only chance was in immediate bloodletting, carried to syncope, regardless of the quantity. He said, that he fully concurred with me in opinion. A large orifice was

made at the bend of the arm. We took away basin after basin of blood. I asked the patient if the pain was removed; again and again he said no—and I perceived no relief in the state of the respiration. We continued to abstract blood till upwards of fifty ounces had flowed, when the patient lapsed into syncope. When he recovered, he had no difficulty of breathing, no pain, in short, the inflammation was removed. If we had stopped short at fifty ounces of blood, the patient would soon have died, for then we should have weakened, indeed exhausted him, without having removed his disorder. Nearly at the same time I had an equally acute case of inflammation of the brain, in which syncope occurred before one ounce of blood had been drawn, and the cure was as effectual. These are two extreme cases, and you will generally find that an intermediate quantity of blood will suffice, varying, perhaps from 10 to 30 ounces, before approaching syncope be induced. The rule for the repetition of the blood-letting, is a return of the pain and difficulty of breathing in the chest, attended by fever; and in acute cases, do not lose time in doubt and indecision.

After large bleedings, there is very often a sort of *hæmorrhagic excitement or reaction;* the nervous system is much disturbed; the pulse becomes very rapid, and there is general distress. This condition is apt not only to renew the inflammation, but to sink the remaining strength. I have long been in the habit of exhibiting *opium* in such cases with great benefit. Give the patient, after a very large bleeding, say 100 drops of the tincture of opium; enjoin the most perfect quiet in the apartment, and in the whole house. The first object is to procure sleep; but if the patient be worried by persons continually treading forward and backward in the room, by the light of a lamp, even by the ticking of a clock, or any similar cause, he is prevented from sleeping, and the design with which you give the opium is frustrated. The observance, therefore, of these things is necessary, if you wish to secure the beneficial effect of the opium, namely, a tranquil sleep, copious perspiration, and the prevention of the hæmorrhagic reaction. The largest quantity of blood which I have ever drawn at once, was in the case above detailed; but a friend once told me, that he

had drawn considerably more before relief was obtained. In cases of this kind, be sure to lay the patient flat before the syncope actually occurs. Generally, however, syncope is produced before 30 ounces are drawn; and if the operation be followed by a full opiate, the necessity of its repetition, will often be prevented. There was a case some time ago, in the Hospital, in which the last-mentioned quantity, followed by an opiate, was sufficient; and in another case, 18 ounces were only necessary, being followed in like manner by a dose of opium.

You must give opium after each venesection, where you have abstracted a large quantity of blood; but you should combine small doses of calomel with the second and third doses of the opium, to prevent its locking up the secretions of the liver. If you adopt this decisive plan of treatment, you will generally succeed in removing inflammation of the lungs within twenty-four hours. Indeed, I can generally remove an inflammation in the first twelve hours, if it be of an acute kind, and seated either in the lungs, pleura, or abdomen; for I repeat the operation, in such cases, at the end of two or three hours, if the signs of inflammation return. Bleeding, it must be allowed, is a great evil; but the presence and increase of a vital inflammation are greater evils.

Some degree of fever may continue after you have removed the inflammation; the patient breathes easily; but the pulse is a little quicker, and the skin is a little hotter than natural, and moist. It is a state of simple fever merely, remaining after the inflammatory one has subsided; this state is best removed by gentle aperients, rest, a spare diet, and by small doses of digitalis.

You will from this statement infer, that decisive blood-letting is necessary, both in acute and sub-acute affections of the lungs and pleura; but there are some *exceptions* to this practice; and as you will have to prescribe now and then for individuals who come under these exceptions, it is necessary for you to become acquainted with them.

The *first* exception is the occurrence of acute or sub-acute inflammation in the *lungs* of *old persons* of a flabby fibre. If you bleed them copiously and repeatedly, in the way which I have

described, they generally die, partly from the effects of the blood-letting, and partly from the inflammation. An old woman had repeated attacks of inflammation of the lungs, and was of a very flabby fibre. She was again seized with an inflammation of her lungs; it began in the evening, but she did not take much notice of it, and did not send for any medical attendant till the next day. About noon she was seen by two physicians, who agreed to bleed her copiously; they bled her to approaching syncope, but she experienced from it no decided relief, and that is a circumstance worthy of consideration, for it is always an unfavourable sign. A few hours afterwards, she was again bled in the same manner as before. The second bleeding gave no relief whatever, and she sunk in a short time after its employment. An individual of the same age and habits was seized with inflammation of the lungs, and instead of prescribing such a large quantity of blood to be drawn, 6 ounces were drawn at the first bleeding, and repeated two or three times, which had a most excellent effect; it lessened the force of the attack gradually, and at last overcame it. If you tell such patients to draw in a breath, they do so very feebly; and if you desire them to expel the air from the lungs, they do so very feebly; they have a short cough, and a weak pulse, with great prostration of strength.

The *second* exception which I should make to the practice of large blood-letting, is in what has been called *typhoid pneumonia*, which may always be distinguished by these marks:—The tongue is glazed, brownish, and is as dry as if it had been baked. The teeth are more or less covered or coated by dark sordes. The heat is not high on the surface of the body, and the pulse is soft and compressible. You must, in this case, be very careful about the abstraction of blood. I do not think that I have seen a patient recover who has been largely and repeatedly bled in this form of pneumonia. In the beginning however of these cases, sometimes the heat is high on the surface of the body, and the pulse is hard and contracted, or expanded and resisting, and then you may bleed moderately with great advantage. I recollect a case of this kind in which 10 ounces were taken; it was followed by a blister, mild aperients, and the patient recovered. About

the same period, I saw another patient who had been copiously bled, and he died. There is a special bronchitis in all these cases, which so changes the constitution of the blood, as to be a powerfully modifying circumstance.

The *third* exception to the use of copious blood-letting in the very onset of common pneumonia, occurs in those cases where the re-action not being developed, the skin remains cool, the respiration weak, and the pulse feeble. Two females in the Hospital were frightened by a thunder-storm, and were seized with inflammation of the lungs and pleura. In the one, the skin became much hotter than natural, and the pulse quick; aud she bore copious bleeding remarkably well; but in the other it assumed a sort of *congesto-inflammatory* character, the skin being cool, the respiration oppressed, and the pulse even fluttering. The best plan in the latter cases, is first to restore the heat to the surface of the body, by applying the hot air bath, and giving a dose of opium; and when the excitement or re-action is established, then you may abstract a moderate or even large quantity of blood, if necessary.

The *fourth* exception is the occurrence of pleuritis in consumption. It often happens, that during the progress of phthisis, the patient is seized with a stitch in his side, when his strength has been worn down by that dreadful malady. About 4 ounces of blood will, in such instances, generally succeed in removing the attack, especially if followed by an opiate and a blister.

Blood-letting then may be considered as the first remedy, and opium as the second, used in the way I have recommended, and when the tongue is moist. It does not answer in the typhoid pneumonia.

3. A third measure in the removal of inflammation of the pleura and lungs, in the use of *aperient* medicines. If you can get the patient's bowels open easily, you will lessen the fever very much. Great advantage is frequently derived by combining colchicum with the purgatives, say, for the first 24 hours, five grains every five or six hours, with salts and senna, preceded by a dose of calomel, rhubarb, and jalap. You should not, if possible, allow the patient to get out of bed, who has inflammation of the

lungs or pleura; he should use a bed-pan, by way of preventing a chill of the surface. Some persons cannot pass their evacuations in a bed-pan, and then the temperature of the chamber ought not to be below 64° of Fahrenheit.

A fourth means to be employed is the use of diaphoretic medicines; and one of the best is warm water. Give the medicine always tepid, for if you chill the stomach, you almost instantaneously chill the surface. You will remember what I said with regard to perspiration in the treament of bronchitis: perspiration produced by a high heat on the surface is very prejudicial; by a moderate one, beneficial. Attend to the quantity of the bed-clothes, also to the temperature of the room, while you give the patient bland tepid drinks. If these means fail in producing a diaphoresis, you may give minute doses of ipecacuanha, the liquor antimonii tartarizati, or the liquor ammoniæ acetatis. This last medicine should be prepared so as to perfectly neutralise ammonia, which is not always the case, since the vinegar and ammonia often vary in some degree in their strength.

The *fifth* means to be used for the removal of inflammation of the lungs and pleura, is the application of a blister. All the other measures which I have mentioned after bleeding and opium are secondary, and so is a blister, which should not be applied until you have lessened the force of the inflammation, by previous evacuations. The French and Italians apply blisters more remote than we do from the inflamed parts. I think there is more benefit from this practice than we are generally disposed to admit. In many cases I have applied a blister to the side of the chest, opposite to that inflamed, with considerable benefit. This is a subject which requires more attention than has been bestowed upon it in this country. Where patients are much exhausted, and very irritable, blisters sometimes prove fatal by their consequent irritation. Avoid them altogether in such examples.

It is a very common practice in Italy and France, to exhibit large and repeated doses of sedatives, especially of digitalis, and more especially of tartarized antimony; but I cannot speak of the comparative merits or demerits of this treatment from my own observation; and I have heard such conflicting testimonies re-

specting it, that I have deemed it right to follow that in preference which my own experience has confirmed.

But with respect to remedies generally, whether old or new, let me advise you to avoid extremes. Be not too sanguine on the one hand, nor too sceptical on the other. Leave your mind in that impartial state, that it may always be open to the reception of truth. You should, in the management of the affection which I have been speaking of, pay great attention to the diet and the regulation of temperature, as a gentle and continued diaphoresis is highly beneficial.

PROGNOSIS.

You must endeavour to prevent the opportunity of giving an unfavourable prognosis. If you are called early to cases of acute or sub-acute common inflammation, wherever that inflammation may be seated, you will be generally successful, provided you adopt right measures, and apply them skilfully. Were I to say what would most influence me in giving my prognosis, I should be inclined to point out the following as the leading circumstances:—1. The nature of the disorder; 2. The peculiarities of the patient; 3. The powers of the remedies employed; and, 4. The number of the doctors concerned. To begin with the last—Knowing what I do, were I a patient, I would be exceedingly cautious in choosing my medical attendant; but having once made my election, he should possess my utmost confidence, and I would rely upon his judgment for the necessity of a consultation, rather than upon the feelings of my friends.

In the first place I shall say a few words on the progress of *inflammatory affections of the air passages*, and in the next, of those of the *lungs* and *pleura*.

With respect to *Cynanche Tonsillaris*, it is not an affection dangerous of itself, but it sometimes becomes so from the inflammation spreading downwards to the larynx. When this happens with ulceration about the tonsils, it is generally fatal. Where cynanche tonsillaris has been subdued, it leaves the parts very weak and susceptible of future attacks of inflammation. It is also a very worrying disorder, occasionally breaking up the strength, and bringing on phthisis. If a patient should have an

attack of inflammation of the tonsils in a large town, and remain very weak afterwards, you should, if possible, send him into the country.

PROGNOSIS OF CYNANCHE LARYNGEA.

This is, perhaps, the most dangerous inflammation of the human body. It runs its course in the most rapid way, sometimes in seven or eight hours, and often in twenty-four or forty-eight hours. You must therefore be very guarded in your prognosis in cynanche laryngea, especially where the voice is nearly suppressed, where the patient cannot cough out, where the pulse grows quicker, and the breathing more laborious. Be very circumspect also about your prognosis in *croup*, especially when combined with *bronchitis*. The prognosis is more unfavourable in infants in croup, and in old persons in bronchitis; infants cannot cough freely, and old persons sooner sink under its progress than those of middle age.

Bronchitis is most dangerous where the patient has little or no cough, or where the cough is so very weak that the quantity expectorated is less than that secreted.

As to your prognosis in *pneumonia* and *pleuritis*, you must be guided principally by the breathing, the heat of the skin, the pulse, and the countenance. If the breathing be laborious, and then becomes not only quicker but weaker, if the skin grow damp and cold, if the countenance become extremely anxious and the pulse gets feebler and more frequent, the prognosis is inauspicious. Delirium frequently occurs in bronchitis, but not in pneumonia and pleuritis; and it is more dangerous in the two latter affections than in the former.

LECTURE XVI.

INFLAMMATION OF THE MUCOUS AND SEROUS MEMBRANES OF THE STOMACH AND INTESTINAL CANAL.

I have already called your attention to the common error of using abstract terms—terms employed to express a certain

combination of symptoms, without a direct reference to the conditions on which they depend, or with which they are inseparably connected. Among such terms are *marasmus*, *dyspepsia*, *indigestion*, and *disorder of the digestive organs*, all of which are most vaguely employed in medical writings. As to the words dyspepsia, indigestion, and disorder of the digestive organs, they have been used as synonymous, and have been supposed to be expressive of one and the same disorder. Yet this is a grievous mistake, for you will find that affections passing under these names are not dependent on one condition, but on many conditions, different in their seat and nature, and consequently requiring a very different treatment. What has been so roundly termed indigestion in the adult, has been called marasmus in children, and proceeds in like manner from various conditions.

MARASMUS.

This affection, supposing it to be one, is marked—1. By a furred tongue. 2. By a fretful temper. 3. By a pale skin. 4. By a round full belly. 5. By irregular bowels. 6. By unnatural stools. 7. By more or less swelling of the upper lip. 8. By more or less wasting of the lower extremities. 9. By a capricious appetite, sometimes good at other times bad. 10. By disturbed or unrefreshing sleep.

The dispepsia of adults, as it is called, has many symptoms in common, among which the following are usually the most remarkable:—1. A furred tongue. 2. Fretfulness; or a depression of mind. 3. Some uneasy sensation, constant or occasional, about the stomach. 4. Some irregularity in the action of the bowels. 5. Some unnatural appearance either of the stools or urine. 6. The appetite is capricious and defective. 7. The sleep is less sound and invigorating. 8. The skin is more or less disordered.

THE PATHOLOGICAL CONDITIONS

Are really different in different individuals; but you will almost invariably find one thing common to that affection called marasmus in children and dyspepsia in adults, namely, that some organs, or parts, are either more excited than natural or more

torpid, particularly the skin, intestinal lining, and liver. It appears a law in the animal body, that when the office of one part is diminished that of another becomes increased. We have evidence of it in the state of the skin: when it becomes torpid, the function of the kidneys is generally increased; when the function of the kidneys is diminished, the function of the skin is increased. If you were minutely to trace the pathological con- condition on which dyspepsia and marasmus depend, you would find them referrable to the following heads, from an extensive survey of facts:

1. To some disturbance of the brain and nervous system, operating on all the organs of the body, and especially influencing the various secretions. No man can attentively investigate what is called dyspepsia, in London, without being convinced how closely the state of mind is very often connected with its origin and progress. Mental emotions have a stimulating or a depressing effect, and hence, in men arduously or anxiously engaged in the world, the nervous system becomes excited, and after a time a state of collapse follows, and the liver, stomach, or bowels become secondarily disordered. Women labouring under distress of mind from some domestic misfortune, such as the loss of a husband, child, or other near relative, are liable to have indiges- tion in a similar manner. Marasmus in children arises, very frequently, from impressions first made on the whole nervous system. In this way it arises, in a great many cases, from want of early or sufficient sleep. Children are kept up later than they should be, and soon become fretful and irritable. The change is first effected through the brain and nervous system, and after- wards on all the organs of the body, and the liver, skin, and bowels become more particularly disturbed. Sometimes the mischief falls mainly on one organ, at other times on several organs.

2. Marasmus and dyspepsia arises from some primary or con- comitant disorder of the skin. Watch the effect of sedentary habits: the first change is seen to manifest itself in the skin; it becomes faded, and at last dry and harsh. Sometimes you can trace this condition of the skin to defective clothing—sometimes

to the defect of cleanliness, or to the influence of bad smells, especially in those who have to sit long in disagreeable odours. Soon after these changes take place in the skin, you almost invariably find that the internal mucous membranes become affected, especially the mucous membranes of the stomach and small intestines. Indeed a great many of those cases which are so desultorily and dangerously characterised as dyspepsia, indigestion, or disorder of the digestive organs, have their origin in an unnatural condition of the skin, which is followed by a disordered condition of the mucous membrane of the alimentary canal, and that again sometimes by a torpid or irregular state of the liver, and of the colon or large intestines.

3. A frequent cause of this affection is some irritation, secondary or primary, in the mucous membrane of the stomach itself. That irritation, in its slightest degree, amounts only to simple excitement; in the next degree it amounts to actual inflammation; and this inflammation of the membrane is generally of a chronic kind, marked by the tongue being peculiarly red at the tip and round the edges; by the papillæ being more red and raised than natural there, and if the individual take a full meal, it commonly excites some uneasiness or pain in his stomach. You have, in addition to these symptoms, when the mucous membrane is chronically inflamed, some pain and tenderness of the epigastrium on pressure, and occasionally nausea, retching, vomiting or loathing.

4. Some torpor or some slow inflammation of the liver may be the cause of dyspepsia. The tongue then is covered with a dirty white, yellowish fur; and if you examine the stools you will find that they are either deficient of bile, or that the bile secreted is vitiated. If chronic inflammation exist, and if you make pressure, particularly in the region of the large or small lobe of the liver, you produce pain. Very frequently all these states exist at once in the same case, and pass under the sweeping designation of marasmus, dyspepsia, indigestion or disorder of the digestive organs.

5. Some irritation in the mucous membrane of the small intestines is not unfrequently the cause of that combination of

symptoms called marasmus and dyspepsia. It may exist in the form of simple excitement, or in that of inflammation. If under the form of inflammation, the tongue has the same appearance as when the mucous membrane of the stomach is chronically inflamed. The stools generally contain more mucus, or fluid matter, than natural, and have an oleaginous appearance; and on pressure you will generally excite some pain in the course of the small intestines. The inflammation most frequently occurs about the lower part of the ilium, and the mesenteric glands are apt to be at last affected.

6. A torpid state of the colon, or inflammatory one of the lining membrane of the colon, may be the cause of dyspepsia, if I must use that term. By far the most common cause of the two appears to me the torpid state of the colon. This condition of the colon, by which it does not regularly discharge its contents, is most frequently produced by mental exertion or anxiety. Those individuals whose minds are much disturbed are most liable to have torpid colons; but torpidity of the colon is often produced by night-watching or late hours, and sometimes it occurs in those persons who omit having an evacuation at the accustomed hour. Occasionally it is dependent on a defective secretion of bile, and that cause can be readily detected by an examination of the stools; but sometimes it arises naturally, without any defect of the secretion of the liver; the defect is in the colon not performing its office, and there alone; and the influence of this state of the colon on the process of digestion is exceedingly great, and also on various other functions.

7. Dyspepsia may arise from flatulency, together with the presence of indigestible or undigested food, and this cause is most common in those who take too large a quantity of slops or of vegetables. A species of fermentation follows, the distention irritates, and crude matters pass into the intestines, and keep up considerable irritation on the mucous surface.

8. Dyspepsia may arise from excess of acidity in the stomach or bowels; this may also be the result of a previous disorder, but, in its turn, it becomes a cause of indigestion, and may produce not only irritation and inflammation of the mucous mem-

brane of the stomach, but also of the small and large intestines, especially in young children.

Here then are eight different conditions on which that combination of symptoms passing under the abstract terms marasmus and dyspepsia, may depend. Each of these conditions is capable of decided proof in pathology, and when I shall have occasion to enter upon this subject at large, you will at once perceive how important it is not only to distinguish these affections, but to treat them as separate ones, and really incalculable injury is done by adopting one mode of treatment to the name, when the nature of dyspepsia is various. Other causes might be enumerated, especially affections of the spinal chord, or its membranes, which frequently disturb the functions of the stomach and bowels, and most evidently so, when the dorsal portion is the seat of disorder. The forementioned affections might be deemed the more primary ones, but any irritation, wherever seated, may disturb the functions of that organ by disturbing the whole nervous system, as we perceive in the progress of many fevers. On the other hand, the stomach itself may be almost accounted a central point in the sympathies, or intercourses which exist between the different parts of the body, so that any irritation existing there may create a distant irritation through nervous connexion alone, as we often witness in cases of strumous opthalmia, arising as soon as ever the stomach is disturbed; or the stomach may operate more indirectly on distant parts, by increasing the heart's action, so that the quickened circulation affects the capillary vessels of faulty structures, as we frequently may perceive in chronic inflammations thus arising in different parts; and, lastly, the state of the stomach and parts connected with the process of digestion may influence the quantity, and even the quality of the blood. I am now merely taking a very cursory view of the subject to guard you against the errors associated with abstract words, and to show you the connexion between certain chronic irritations, and the rise of acute and sub-acute inflammations.

Indeed it is of great consequence to have a distinct notion of what is called dyspepsia and marasmus; for if my observations

be correct, those men who indiscriminately treat these affections on the same plan, as if they all depended on exactly the same cause, will be most unsuccessful in practice. If, for example, they were to recommend on all occasions *blue pill* and a flesh diet, they would of necessity do in all, or most of those cases where mucous irritation is concerned, a great deal of mischief.

Dr. AYRE has done a considerable service to the profession, by pointing out, in his useful work, those cases in which mercury is alone required, and in most of his remarks I fully concur with respect to the administration of mercury, now so much abused. I know of no means more likely to convert a simple local excitement of the mucous intestinal coat, into actual inflammation, either acute or sub-acute, than the use of the blue pill and a flesh diet. It is high time either that we should discard all such abstract terms, since they are only calculated to mislead, or that we should distinctly separate and clearly describe the various conditions and their signs, with which they are connected.

Most frequently some chronic irritation or torpor precedes an attack of inflammation of an acute or sub-acute kind in the abdomen. The chronic irritation is mostly on the mucous coat of the alimentary canal; the chronic torpor is then in the liver, or colon, while, in the majority of cases, the skin is simultaneously disordered. Sometimes these conditions attend combinedly the irritative, whether simple local excitement or actual inflammation on the mucous membranes of the stomach, great or small intestines. Sometimes this local irritation of the mucous surface goes on without any febrile disturbance of the whole system, for a considerable time; it goes on till it reaches a certain point, and then the disturbance of the vascular system manifests itself in the form of fever.

EXCITING CAUSES.

You will recollect that I arranged the remote occasions of common inflammatory fever under four heads—depressants, stimulants, irritants, and interruptants. Now, it often happens that a child already predisposed, is subjected to the influence of these agents,—to a depressant, as *cold*; a stage of congestion is

produced, the stage of excitement follows, and inflammation takes place in that part which was predisposed at the time of the exposure. That part is generally the mucous membrane of the stomach or intestines. If the weather be cold and damp, it most usually takes place in the mucous membranes; but if the weather be cold and dry, then it often takes place in the serous membranes at the same time. It is a very remarkable circumstance, that in certain states of the atmosphere, certain parts of the intestines are liable to become affected. Within the last two months I have met with more cases of inflammation in the mucous membrane of the large intestines than in two years previously. If cold be applied to the feet, inflammation often takes place in the large intestines. I had an attack of inflammation of the mucous membrane of the large intestines, called dysentery, shortly after the commencement of this course; I had been much debilitated by hard professional work, and by lecturing here, and by making clinical remarks at the dispensary. One night I got chilled in my feet and lower extremities; and it so happened at that time that I took two aperient pills instead of one, which I had been accustomed to do, and their operation, favoured by other concurring causes, brought on the dysentery. I have seen similar cases, and if you were to trace them to their origin, you would often find that they arose from like causes. Inflammation of the mucous membrane of the intestinal canal is very apt to arise, if the weather be alternately hot and cold, or if there be a great range of the thermometer. Heat may be considered as a stimulant, because it operates on the whole nervous system. A high temperature of the atmosphere increases the sensibility much, and particularly that of the alimentary canal; so that in summer many articles of diet are apt to disagree, to excite, in fact, irritation, which could be taken with perfect safety in cold weather. This is the reason why fruits disturb the stomach and bowels more in hot than in cool weather, and the same remark is applicable to many other articles of diet.

Inflammation of the intestinal lining often proceeds from an irritant, and that which is most common, is improper food. It may frequently be traced to this cause in the working classes;

their animal food is often bad, and their vegetable food particularly so, besides they drink sour porter or spirits. Among the rich, the frequent use of highly-seasoned dishes, stimulating sauces, and acid wines, often bring on the same affection. Sometimes chronic, and subsequently acute or sub-acute mucous inflammation is induced from a *hasty mastication* of food. If a person take a meal of heavy food hastily, he feels an uneasiness in his stomach, which may pass on to inflammation. Slow mastication, rest after meals, and an interval so long between each meal that one may be digested before another be taken, are very important things in the prevention of mucous irritation of the alimentary canal. Sometimes the operation of dried fruits, or the skins, seeds, husks, and fibres of fruits, lead directly to inflammation of the mucous membranes, especially in children. From the irritation which these indigestible articles excite, many people risk, and even lose their lives, especially if they be used in the early stages of convalescence, when the mucous lining is generally much predisposed. You ought never to allow pears, apples, and such things in a chamber where fever exists, for they are often productive of great mischief. Once I was attending a child convalescent from inflammation of the mucous membrane of the small intestines; contrary to my advice, the father gave the child a raw apple, which caused such a relapse of inflammation, as proved mortal. To a young lady, who was convalescent from a violent attack of low fever, expressly against my orders, sponge-cake and fruit were given, and she died.

Bad water very often produces great irritation in the mucous membranes. Acid drinks, as thin sour wines, cider, or beer, frequently produce irritation of this structure. It would appear that inflammation of the intestinal lining is more common in France than in this country, and it may be accounted for, because the French diet is more complicated; they eat raw fruits and vegetables, with oils, and drink sour wines and brandy, which excite great irritation in the alimentary canal, and frequently produce inflammation, aided perhaps by their warm climate, which increases the sensibility of the whole body.

The stomach is often disturbed merely by quantity. It is

wrong to overload the stomach with liquids, especially when we eat largely of solids; there is not any necessity for drinking one half of what is usually done at meals. At the the same time I will admit that many individuals cannot digest their food without taking large quantities of liquids. The number of meals is worthy of attention. Three meals in the course of the day, generally speaking, are sufficient, at the intervals of about four or five hours, although many weak nervous persons require food rather more frequently. Simplicity in kind, and moderation in quantity, is the golden rule of diet. Some medicines act as direct irritants. Among these, are mercury, and drastic or harsh purges. From repeated observation, I am convinced that many cases of irritation of the mucous membranes of the bowels is produced by dosing weak persons with blue pill and other mecurials while the skin is cool; such persons often go on taking a blue pill every other night, or what is much more pernicious, small doses two or three times a day, till the general strength is broken up, and till mucous inflammation is the consequence. Mercurials are excellent remedies in many cases of fever, but their speculative application in what are called dyspeptic, bilious, and stomachic cases, is exceedingly injurious to society. The only variety of dyspepsia in which mercury can be of any use, is that in which there is a torpor or irregularity of the liver, in all the others it does harm. I find even the torbid liver frequently converted into the state of chronic inflammation from the abuse of mercury, which, next to the inordinate use of ardent spirits, is now the most common cause of produced organic derangement of the liver. The abuse of mercury is not confined to adults; mothers, now-a-days, often give it so largely to children as to lead to serious consequences, immediate or remote. Examine a child's stool after you have given calomel, when it was in tolerable health, and you will invariably find that it contains a large quantity of mucus, a proof of its irritating influence. But recollect that its operation is so different under the circumstances of health and disease, that in many cases of the latter, its judicious administration is the greatest benefit which can be conferred upon the patient. There are other medicines which often excite this in-

flammation, such as the frequent use of drastic purges, and I can scarcely now ever give any such purges, at all, having so often seen them produce intestinal irritation. No man can practise, in London especially, without being convinced that he cannot practise successfully unless he well understands the conditions of the mucous membranes.

You may trace this affection sometimes to the air which people breathe. It is notorious that the air of the dissecting room very often inflames the mucous membrane of the intestinal canal. I have seen many cases among the pupils, who have had very good health before they commenced dissecting, and in a shorter or longer time, they have had distinct marks of inflammation on the mucous membrane of the small or large intestines. The air must, in this way, either operate indirectly on the mucous membrane through the blood, or by being mixed with the saliva and swallowed, it may operate directly on the mucous surfaces, acting as an irritant

ADVICE TO STUDENTS.

You should never go into the dissecting rooms fasting; if you do so, at least, when the health is rather broken up by hard study, the air is more likely to produce that effect which I have before named. One great evil which I have noticed among the students is, an inattention to their domestic comforts and health; an irregularity in taking their meals, and sitting up late at night. They should take animal food twice in the day, masticate it slowly, rest after each meal for some time, and take moderate exercise in the open air between meals. They should retire early to bed, for nothing breaks up the health so soon as the habit of sitting up very late. They should use occasionally a tepid or shower bath, because it is of the utmost consequence to keep the skin in a healthy condition. Whenever that is much disordered, the internal mucous membranes always suffer sympathetically. They should not drink much with their meals, especially when dissecting; but if they feel thirsty they may drink a little toast and water about an hour afterwards, taking care that the water be transparent. In regard to the last of the exciting causes which

I mentioned, namely, interruptants, I may remark that a torpidity of the liver is frequently accompanied by some impediment to the free return of the blood by the vena portæ, and this condition seems sometimes to predispose the mucous lining of the intestines to inflammation; at least torpidity of the liver often precedes the attack. An overloaded colon, I believe, frequently produces an impediment to the return of the blood by the mesocolic veins, and thus disposes to an inflammatory condition. Regularity of the bowels is one of the best preventives of inflammatory attacks, whether of the small or large intestines; but that regularity should be established, not by taking physic, but by attention to diet, and by instituting a habit of evacuation daily at a certain hour.

LECTURE XVII.

THE SYMPTOMS AND MORBID APPEARANCES OF INFLAMMATION OF THE MUCOUS AND SEROUS MEMBRANES OF THE ALIMENTARY CANAL.

It is necessary, for the sake of distinction, to use some terms expressive of inflammation in the mucous membrane of the stomach, and of the mucous membrane of the intestines; and other terms expressive of inflammation in the serous membrane of the stomach and intestines. For this purpose, therefore, I shall use the terms *Muco-Gastritis*, and *Muco-Enteritis; Sero-Gastritis*, and *Sero-Enteritis.*

SYMPTOMS OF ACUTE MOCO-GASTRITIS.

The symtoms of acute muco-gastritis, or acute inflammation of the mucous membrane of the stomach:—1. Pain in the epigastrium, accompanied by a feeling of heat in the stomach. That feeling of heat is so remarkable, that I have known some persons, in the progress of the acute form of this affection, desire that the epigastrium might be sprinkled with cold water. 2. An intense

desire for cold drinks. 3. Nausea, retching, or vomitting, especially on taking any liquid matter into the stomach. 4. The tongue is intensely red at the tip and edges. I wish to draw your attention to this circumstance, because, singly, it is one of the most diagnostic symptoms of inflammation in the mucous membranes of the stomach and small intestines, in the acute or sub-acute form. You will perceive this red colour of the tongue very distinctly, if you desire the patient to protrude the tip of it between his lips, and contrast the colour of it with that of the lips; the tongue will be comparatively of a bright vermillion tint. You will also generally find the papillæ more red and raised than natural at the tip and round the edges. 5. The pulse is small, quick, and compressible, when the inflammation is acute. The pulse, taken in conjuction with other signs, is a very good guide in many inflammations; and, generally speaking, it is softer when the mucous membranes are inflamed than when the serous membranes are inflamed. 6. The heat on the surface of the body is generally higher than natural, but particularly so over the epigastric region. When the brain is inflamed, the integuments covering the cranium are hotter, sensibly, than those in other parts. The same thing often happens in the integuments of the cheek, when the pleura is inflamed. Sometimes, in high abdominal inflammations, the escape of caloric is so rapid from the integuments of the belly, that it produces a tingling heat at the extremities of the fingers. 7. When the inflammation is acute, there is anxious and hurried breathing.—These are the seven combined symptoms which attend the acute inflammation of the mucous membrane of the stomach.

SYMPTOMS OF ACUTE SERO-GASTRITIS.

When the serous membrane of the stomach is inflamed, the most prominent symptoms, are—1. Pain in the region of the stomach, but without a sensation of internal heat. 2. Nausea, retching or vomiting. 3. Tongue more furred about the root and centre than in the acute muco-gastritis, and is not red, but pale, at the tip and edges. 4. The pulse is small, quick, and hard; not compressible, as it is in muco-gastritis. 5. The heat about the epigas-

trium is less intense than in acute muco-gastritis. 6. The respiration is even more hurried and anxious.

DIAGNOSTIC MARKS BETWEEN ACUTE MUCO AND SERO-GASTRITIS.

The diagnostic marks between the acute muco-gastritis and acute sero-gastritis are three :—1. In sero-gastritis there is an absence of internal heat in the region of the stomach ; whereas, in muco-gastritis, there is a sense of burning heat in the stomach. 2. The tongue is very red at the tip and edges in muco-gastritis ; whereas it is comparatively pale in sero-gastritis. 3. In muco-gastritis the pulse is soft and compressible ; but in sero-gastritis it is hard and resisting. Moreover, there is a more intense desire for cold drinks in muco-gastritis than in the sero-gastritis ; while there is likewise a greater prostration of strength in the muco-gastritis than in the sero-gastritis. Now the subdued or sub-acute form of inflammation is more insidious in its increase, and more difficult to detect.

SYMPTOMS OF SUB-ACUTE MUCO-GASTRITIS.

When the mucous membrane of the stomach is sub-acutely inflamed, it is marked by—1. An obscure pain in the region of the epigastrium, which, in some cases, you could only ascertain satisfactorily by pressure made on the parts. 2. A concentration of heat externally about the epigastrium. 3. The tongue is red at the tip and edges, as in the acute muco-gastritis. 4. A sense of uneasiness on taking food; or some degree of nausea or retching, seldom amounting to vomiting. Though vomiting always attends acute inflammation of the mucous and serous membranes of the stomach, yet it is mostly absent in the sub-acute form of inflammation ; and, sometimes, even the loathing of food is also absent. 5. A desire for cold drinks. 6. A soft and compressible pulse, less quick than in the acute form, for the pulse is then generally about, or above, 120 ; whereas, in the sub-acute form, it is rarely much above 100 in the minute. 7. The respiration is far less hurried and anxious in the sub-acute than in the acute form of muco-gastritis. Another very great

difference between the acute and sub-acute forms of muco-gastritis is, that the duration of the one is much longer than the duration of the other. The acute, if not relieved soon after its commencement, runs a very rapid course, therefore the medical man has but little time in which he can successfully operate; but the sub-acute, having a more protracted course, affords a better opportunity.

SYMPTOMS OF SUB-ACUTE SERO-GASTRITIS.

1. The pain is more distinct in the epigastrium than when the mucous membrane is sub-acutely inflamed. 2. There is some concentration of heat about the epigastrium. 3. The tongue is more furred, and is not red at the tip and edges. 4. There is a sense of uneasiness, or loathing of food, but sometimes it is absent. 5. Thirst. 6. The pulse is quick and hard. 7. The breathing is quick and somewhat anxious.

DIAGNOSIS OF SUB-ACUTE SERO AND SUB-ACUTE MUCO-GASTRITIS.

The following are the chief diagnostic marks between these affections:—1. The pain is more distinct in sub-acute sero-gastritis than in the sub-acute muco-gastritis. 2. The patient has a greater desire for cold drinks in the sub-acute muco-gastritis than in the sub-acute sero-gastritis. 3. The tongue is red at the tip and edges in the sub-acute muco-gastritis; whereas it is pale in the sub-acute sero-gastritis. 4. The pulse is more soft and compressible in the sub-acute muco-gastritis than it is in the sub-acute sero-gastritis; and further, the breathing is more quick and anxious in the latter than in the former.

When the inflammation falls upon the mucous and serous membranes of the small intestines, it has different symptoms; and again very different when it attacks the mucous and serous membranes of the large intestines.

SYMPTOMS OF ACUTE MUCO-ENTERITIS AND OF THE SMALL INTESTINES.

1. Pain in the course of the small intestines, often accompanied by a sense of heat. 2. A concentration of heat externally over

some portion of the small intestines. 3. Redness at the tip and edges of the tongue, or a red streak down the centre. 4. Nausea, retching, or vomiting; if not in the beginning, at least in the progress of the affection. 5. The pulse is soft and compressible, but rapid, being generally about 120 in a minute. 6. The breathing is anxious. 7. The bowels are easily moved. 8. The stools exhibit a superabundance of mucus.

SYMPTOMS OF ACUTE SERO-ENTERITIS OF THE SMALL INTESTINES.

1. A severe pain in the bowels, increased by a deep inspiration, by coughing, or by pressure on the surface of the abdomen. 2. There is a concentration of heat externally over the small intestines, by which you will perceive that there are some signs common to all these affections; but there are others which are peculiar to each. 3. The tongue is furred. 4. Nausea, retching, or vomiting, either in the commencement or during the progress of the affection. It is set down in our systematic works, that vomiting always attends the commencement of acute sero-enteritis, but it is sometimes then absent. 5. The pulse is small, quick, and hard. 6. The breathing is anxious. It is said by the same author that the fever which accompanies this affection is typhus, because the breathing is anxious and the pulse quick and hard; but it is an absurdity to say so when it arises from a common cause, since the combined signs of typhus are absent. If you were to allow such a supposition, it would have the effect of preventing you from adopting those active measures which can alone save the life of the patient. 7. Constipation. 8. The whole skin is generally hotter than natural.

DIAGNOSIS BETWEEN ACUTE MUCO-ENTERITIS AND ACUTE SERO-ENTERITIS.

You will at once perceive, by reflecting on the symptoms, what the diagnostic ones are. 1. The pain is less in the acute muco-enteritis than in the acute sero-enteritis. 2. The tongue is red at the tip and edges in the acute muco-enteritis, but it is not so in acute sero-enteritis. 3. The pulse is comparatively soft and compres-

sible in the acute muco-enteritis to what it is in the sero-enteritis. 4. The bowels are easily, very easily, evacuated in the acute muco-enteritis, but obstinately constipated in the acute sero-enteritis of the small intestines. 5. The stools have a very different character in these affections. In the acute muco-enteritis the stools are copious, oleaginous, or mucilaginous; whereas they are less fluid, not slimy, in the sero-enteritis. I am particular respecting these points, being convinced that it is of very great importance to distinguish inflammation when seated in the mucous and when seated in the serous membranes, because the treatment of them ought to be different.

When the *peritoneum lining* the abdominal *muscles* is inflamed, it is called peritonitis, and when the *peritoneum enveloping* the *intestines* is inflamed, it is usually denominated enteritis.

DIAGNOSIS BETWEEN PERITONITIS AND SERO-ENTERITIS.

1. In peritonitis the pain is diffused over the whole abdomen; whereas in sero-enteritis it is limited, circumscribed to a particular part. 2. In peritonitis the heat is more high on the surface of the body than in sero-enteritis. 3. In peritonitis the pulse is more full and strong than it is in sero-enteritis. 4. In inflammation of the peritoneum lining the abdominal muscles, the stomach is not disturbed by vomiting in the beginning, only in fact during the progress or towards the close of this affection; but in inflammation of the peritoneum enveloping the small intestines, or sero-enteritis, the stomach is often affected from the first. Recollect, however, that it sometimes happens that the peritoneum lining the abdominal muscles, and that covering the intestines, are sometimes simultaneously inflamed, and then you have a combination of the symptoms.

THE SYMPTOMS OF SUB-ACUTE MUCO-ENTERITIS OF THE SMALL INTESTINES.

The progress of sub-acute muco-enteritis is very insidious, and if you do not understand it well, you will never know how to treat the fevers of children especially, or that low degree of fever in adults which frequently depends on a sub-acute inflammation

of some portion of the mucous membrane of the small intestines. The combined systems are :—

1. An obscure pain in the region of the affected part. It very often happens, that if you ask the patient whether he has any pain in his bowels, he will distinctly say no, but on desiring him to take a deep inspiration, or to cough, and if at the same time you make gentle pressure on the abdomen, you will detect it. But it is absent in some cases, even when you use pressure. If, however, you attend to the combination of other symptoms, you will be at no loss to understand whether this affection be present or not, even if the pain should be absent. 2. There is a concentration of heat over the small intestines. Whenever you put your hand over the abdomen of a patient, and find a pungent heat there, it is a very suspicious circumstance, and should lead you to a minute examination, in order to detect the seat and nature of the disorder. 3. The tongue is red at the tip and edges, the colour of a beef-steak exposed to a frosty atmosphere. 4. The bowels are easily moved. 5. The stools are mucilaginous or oleaginous, like thin paint. 6. The abdomen is flat. In the progress of inflammation of the mucous membranes, the belly grows flatter and flatter, the naval is drawn towards the spine, and the integuments stretched across, at last, like withered parchment. The contrary is the case where the serous membrane is inflamed ; for then the belly gets fuller and rounder in the progress.

SYMPTOMS OF SUB-ACUTE SERO-ENTERITIS.

1. The pain is far less acute than it is in the highest degree of this affection, but yet it is generally distinct ; 2. The concentration of heat is considerable about the abdominal integuments ; 3. The tongue is somewhat furred ; 4. Constipation is present ; 5. The pulse is hard, but small ; 6. The belly is round and full ; 7. The breathing is rather anxious.

DIAGNOSIS BETWEEN SUB-ACUTE MUCO-ENTERITIS, AND SUB-ACTUE SERO-ENTERITIS.

1. In the sub-acute muco-enteritis, the pain is more obscure than it is in the sub-acute sero-enteritis. 2. In the sub-acute muco-

enteritis, the tongue is red at its tip and edges, but paler than in the sero-enteritis. 3. The pulse is softer in the sub-acute muco-enteritis than in the sub-acute sero-enteritis. 4. The belly is flat at the commencement of the sub-acute muco-enteritis, and becomes flatter and flatter in the progress of the affection; whereas it is round in the sub-acute sero-enteritis, and becomes rounder and rounder from the generation of flatus.

The symptoms assume a different character when the mucous membrane of the large intestines is inflamed, and these symptoms, again are much modified, according to the part of mucous membrane so inflamed.

SYMPTOMS OF INFLAMMATION OF THE MUCOUS MEMBRANE OF THE LARGE INTESTINES, AND FIRST ABOUT THE CAPUT COLI AND UPPER PORTION.

Symptoms when the mucous membrane of the upper part of the colon is inflamed:—1. Diarrhœa. I have only met with one exception to this; I examined a body after death, where there was inflammation, and even ulceration, of the upper part of the large intestines, and yet the patient had had no diarrhœa. 2. The stools generally resemble muddy water, and are dark and offensive. 3. Pain in the part, especially on pressure. 4. Fever, but not so urgent as in inflammation of the mucous membrane of the small intestines. The heat is not so high, and the pulse is not so quick, as when the small intestines are inflamed, therefore do not mistake it for a common diarrhœa. 5. There is a very considerable flatulency. 6. The patient generally passes his urine more frequently than natural. I am inclined to think that the urinary organs are more connected with the large intestines, in the due performance of their functions, than most physiologists suppose. Other causes produce a diarrhœa; but recollect that I am now speaking of diarrhœa depending on one condition, namely, inflammation.

It is a remarkable circumstance, that when inflammation attacks the mucous membrane of the sigmoid flexure of the colon and upper part of the rectum, the symptoms assume a different character, and constitute what is called, *dysentery*. This, however, is a name which explains nothing of the morbid condition of the

part; but, because a man has purging with tenesmus, he is said to have a dysentery.

SYMPTOMS OF INFLAMMATION IN THE MUCOUS MEMBRANE OF THE SIGMOID FLEXURE OF THE COLON, AND OF THE UPPER PART OF THE RECTUM, OR DYSENTERY.

The first sypmtom is *Tormina*, or a twisting and writhing pain about the belly and naval. It comes on at different periods, sometimes every half hour, or every hour, sometimes a longer period, and is always followed by a desire to go to stool.

2. *Tenesmus*, or an irresistible desire to have an evacuation from the bowels. 3. There is considerable straining experienced; the patient sits over the night-chair for ten, fifteen, or twenty minutes, and yet nothing but mucus or blood passes; and in the worst cases there is a mixture of mucus and blood. The patient has an attack of tenesmus after tenesmus, and it generally ends in his passing a little mucus or bloody evacuation. 4. There is a very considerable flatulency. 5. The pulse is sometimes much disturbed at the onset, but in the progress it often becomes softer and slower, not more perhaps than 80 or 90, and yet the patient shall be labouring under the most severe form of dysentery. 6. There is a peculiar throbbing perceptible in the mesenteric arteries, which appears to be owing to the impediment offered to the transmission of the blood through the capillary vessels of the inflamed part. 7. There is a less degree of fever after the first few days than might be anticipated. The tongue is covered with a dirty white fur, and if the small intestines be not implicated, its tip and edges are pale. The patient at first generally loses his appetite, but in the progress of the affection he frequently has a longing after indigestible food and strong drinks, as made dishes, or highly seasoned ones, wine, porter, or the like. The inflammation goes on, if not arrested, the mind being perfectly collected, until at last the patient passes pus in his stools; and then, especially if a practitioner had an acute sense of smell, and had once been in a room in which a patient had passed puss in his stools, the odour is so peculiar that he would never afterwards forget it. The patient wastes rapidly, and the belly becomes, toward the

termination of the disease, quite flat; ulceration then having taken place, which ought to be distinguished from that ulceration which so frequently occurs at the lower part of the ilium, the product of sub-acute inflammation there. When the mucous membrane of the small intestines passes into a state of ulceration, it generally takes place about the ilium; and you might know whether ulceration was taking place there by the following—

SYMPTOMS OF ULCERATION IN THE MUCOUS MEMBRANE OF THE ILIUM.

When it takes place here, you cannot detect the presence of pus in the stools as you can when the mucous membrane of the large intestines are ulcerated, the stools will often be found to resemble water in which putrid flesh has been washed. The belly grows flatter and flatter; the face more and more sunk; the temples and cheeks and eyes hollow, especially the last, for there appears to be an absorption of the adipose substance round the infra orbitar ridge. The pulse keeps up, being rather higher than natural; and the tongue remains red at the tip. There is a gradual, and at last a great emaciation. It sometimes happens, in the inflammation of the mucous membrane of great and small intestines, that the patient becomes, apparently, very much easier; the fever lessens, the pulse becomes slower, and the tongue somewhat cleaner; but still he has an obscure uneasiness in the belly. Suddenly the patient is seized with a severe pain in his abdomen, which soon spreads over his whole belly; the skin becomes hot, the pulse rapid, and he generally dies in twenty-four or forty-eight hours. In examining such cases after death, I have found that ulceration had penetrated through the mucous membrane, and having touched the peritoneal coat, the patient had died of acute peritonitis.

THE MORBID ANATOMY OF THE FOREMENTIONED AFFECTIONS.

When the *mucous membrane of the stomach, or intestinal canal*, has been acutely or sub-acutely inflamed, and terminated fatally, the following are the appearances which it presents:—1.

A very considerable redness. The redness most frequently seems like a diffused flush over the whole surface ; but, if examined attentively with a good glass, you would perceive that the part was minutely injected : it seems made up of a congeries of small blood vessels. 2. A pulpiness, or softness ; the mucous membrane appears more pulpy, or soft, than natural. 3. A thickened state of the mucous membrane. If you refer to Dr. Baillie's plates, you will find a very good representation of this state of the membrane with an appearance of ulceration. But what he gives as ulceration, is merely that puckering of the membrane which precedes real ulceration ; for, in that stage, if you stretch it, the membrane it entire. It is very common, about the lower portion of the ilium, to find patches of the mucous membrane thus puckered, and even ulcerated, about the size of a sixpence, Sometimes the mucous membrane is found in a state almost like a honeycomb, from ulceration, especially in the large intestines. It very often happens that the mesenteric glands are red and swollen, particularly where ulceration shall have taken plaee. Irritation of the mucous membrane of the small and large intestines is the most common cause of enlargement of the mesenteric glands, but not the only one ; for I have known them diseased without that affection, but this is rare. Etmuller, Roydern, and Wagler, have all alluded to this secondary disease of the mesenteric glands ; so that the circumstance of its discovery is not so recent as some have supposed. The calibre of the intestines is sometimes much contracted by the continuance of mucous inflammation.

When the *serous membrane* of these parts has been inflamed, you find—1, a preternatural redness ; 2, an effusion of lymph ; 3, an effusion of serum. Where the most lymph and serum is effused, there you find the least traces of redness. The only exception to this remark occurs where copious blood-letting has been early employed ; for then very often but little redness is found after death, and but little effusion of serum and lymph. Pus is occasionally effused from serous inflammation of the abdominal cavity.

I may observe, that you might divide inflammation of the large

and small intestines into two stages; the stage of *excitement*, and the stage of *collapse*. In the stage of excitement, the pulse generally maintains its force; but in the stage of collapse, the pulse becomes very feeble, and much quicker. In the stage of excitement, the pain is generally distinct through its whole course: in the stage of collapse, the pain either remits or entirely disappears. In the stage of excitement, the heat is higher than natural; in the stage of collapse, it declines. In the stage of excitement, there is comparatively considerable strength; in the stage of collapse, it declines even to complete prostration. In the first, the countenance maintains a tolerably natural appearance; in the second, it becomes hollow and sunk. In the first, the belly has nearly a natural appearance at the commencement; it becomes flatter and flatter in muco-enteritis as the disease advances, and more round and tense in sero-enteritis; lastly, in the second stage, there is mostly vomiting, if the serous membranes of any portion of the intestines be inflamed.

LECTURE XVIII.

THE TREATMENT OF ACUTE MUCO-GASTRITIS, OR ACUTE INFLAMMATION OF THE MUCOUS MEMBRANE OF THE STOMACH.

When an acute form of inflammation attacks the mucous membrane of the stomach, it generally runs a very rapid course; indeed, if not relieved at the onset, it most frequently terminates fatally. The promptest measures are therefore necessary. There are two means which have great power in arresting this inflammation, namely, *Blood-letting and Opium*.

BLOOD-LETTING.

This must be carried to approaching syncope, else it will do no good whatever, indeed it will do harm. If in an attack of acute inflammation, you bleed so as to weaken the patient, without making a decided impression on the local affection, then I

say, that so far from the bleeding being useful, it is prejudicial, inasmuch as it does not remove the inflammation, and exhausts the strength. You must, in this affection, bleed without a reference to any determined quantity, you must look only to the effect which that bleeding should produce, namely, approaching syncope, and the consequent removal of the inflammation. After the bleeding, the irritation of the stomach being allayed, give a full *opiate*, say from 80 to 100 drops of the tincture of opium to an adult, in a very small quantity of water; or three grains of pure opium in the form of a soft pill. If you have any doubt of the medicine being rejected, if the patient exhibit nausea or retching, then it is better to give the opium in the form of a suppository, or of an injection. It has been said, that three grains of opium introduced into the rectum, have an equal effect to one grain taken into the stomach. But if my observations be correct, the relation is nearly as 1 to 2; two grains introduced into the rectum being equal to one taken into the stomach. If you introduce the opium in an injection, you should use very little water, one or two ounces will be quite enough, for if you inject a large quantity of water, it stimulates the rectum by its distension, and the whole is returned. But the suppository is the better method of the two; and then four or five grains of opium must be used in those urgent cases where copious blood-letting has been premised; but less doses where less blood is drawn. Patients can bear larger doses of opium after blood-letting than they can in health; and you may produce all the good effects of opium where the stomach is irritable, by administering it in the form of an injection or suppository. This plan of treatment, prompt and decisive blood-letting, followed up by a full dose of opium, will very often at once remove an acute inflammation of the mucous surface of the stomach. If any signs of inflammation remain afterwards, particularly under a sub-acute form, then the application of leeches to the epigastrium will be required. If you reduce an acute inflammation of the mucous membrane of the stomach to a sub-acute or subdued one, local bleeding will be quite sufficient to remove the latter, provided attention be at the same time paid to the regimen.

Twelve leeches at least should be applied to the epigastrium; it is generally better to take them off at the end of a given time, say 20 minutes, or half an hour, than to have the patient worried by allowing them to remain on till they drop off themselves. Sprinkle a little salt water over them, and they will fall off immediately; then put over the orifices a flannel bag stuffed with bran, and wrung out of hot water, and before that becomes cool, remove it, and have another ready, which must be applied in the same manner. This process may be continued for half an hour, and then a little lint may be pressed on the puncture, and afterwards covered by adhesive plaster spread on linen, in order to stop the further oozing of blood; or a thin warm linseed poultice may be applied, where the weight of the bag is at all oppressive or disagreeable

If any uneasiness still remain, the leeches ought to be re-applied, and a blister will generally have a good effect, if some chronic uneasiness exist about the pit of the stomach; for blisters, have little comparative power over acute or sub-acute inflammations, but are often beneficial in the more protracted forms. It sometimes happens that a degree of irritability remains even after the inflammation has been completely removed, and then if the stomach be allowed to rest, if it be not crammed with too plentiful a supply of drink, that irritability will entirely abate. Saline effervescing draughts are good in this last mentioned state of the stomach, for they appear to allay the irritability. The food, too, should be of the blandest kind, and given in very small quantities at a time, lest the stomach be offended; the farinaceous articles, such as arrow-root, are the best, or fresh rennit whey will answer extremely well. But in the commencement of the attack, the bowels should be cleared by the administration of an aperient enema.

TREATMENT OF ACUTE MUCO-ENTERITIS OF THE SMALL INTESTINES.

With respect to the treatment of this affection, it is precisely similiar to that which I have laid down for the acute muco-

gastritis. Bleed the patient in the first instance to approaching syncope, and, in the next place, as nausea, retching, and vomiting are frequently absent, you may give a full dose of opium by the stomach, having previously evacuated the large bowels by an injection. It is a very important thing to bear in mind, that when you fail in entirely removing the acute inflammation of the mucous membrane of the stomach, or small intestines, that you very often convert it into a sub-acute form, which frequently, having a sort of determinate duration, goes on for two or three days, or even longer, gradually yielding to a less active treatment than that first adopted. In such cases, the best rule is this, namely, as long as there is any pain on pressure over the epigastrium or abdomen, you must daily re-apply leeches. The sub-acute inflammation, as indicated by the red-tipt tongue and uneasiness on pressure, may continue for some time, but never consider the patient safe while these two symptoms exist. Nothing appears to me, in reviewing my past practice, more difficult than to ascertain precisely that point where to stop the active treatment, in certain inflammations of mucous surfaces. I am quite sure, that in many of such cases, practitioners sometimes err egregiously, by pushing the active measures too far. If they forget that the sub-acute inflammation often has a sort of determinate duration, and if they push on the same active treatment, with which they set out, when the inflammation had become sub-acute, they would destroy the patient. You must adopt an intermediate treatment to remove the sub-acute inflammation of the mucous membrane of the small intestines.

Sometimes hæmorrhagic re-action, or excitement, follows copious evacutations of blood, attended by that state which, we call general irritation, some disturbance in the mucous and vascular systems, which, if not properly managed, will not unfrequently prove mortal. Indeed I believe that many patients have died from such a condition, induced by a very copious bleeding, and not rightly controlled afterwards.

Wherever you have reason to believe that inflammation is entirely subdued, and when the pulse continues small, it is best to pause and sooth the patient to nurse his strength by rest, and not

pass at once from one extreme to the other, I mean from the use of evacuants to that of strong stimulants.

You must be very careful, then, what you prescribe when patients have been very much weakened. One great error amongst young practitioners is, that they give too many medicines successively or together. They prescibe something in the morning, and again at noon, and in the evening; they become alarmed, and try to combat every symptom as it arises, and in that manner patients are sometimes worried to death, having no respite from physic or from food either during the day or the night.

There are some *poisons* which produce acute muco-gastritis and acute muco-enteritis, and when we know of no tried and certain antidote, the plan to treat such cases is by common means, the same as you would use in any other excited inflammation. Some persons seem to forget that in the present imperfect state of our knowledge, some poisons must be treated on common principles. I once cured a patient by copious bleeding after *arsenic*. Mr. POPE, in a case last year, succeeded in the same manner. The person had inflammation of the stomach, he treated that by bleeding and opium, afterwards the head was attacked, and then the bowels by inflammation, each of which he successfully met by prompt and powerful evacuations. Once I saw a young woman who, by mistake, took one ounce of the *impure carbonate of potash*, supposing it to be Epsom salts, and though she had been once bled before I saw her, yet I found that she had all the symptoms, not only of the acute muco-gastritis and enteritis, but also of pseudo-gastritis aud enteritis. I ordered her to be bled again largely, gave her a full dose of opium, and she got well. Again I knew a young man who, by way of experiment, took a large dose of *prussic acid*, as many as twenty drops, to try its effects upon himself. He took this in the afternoon, he did all the ordinary business of the shop for nearly an hour, and then suddenly became very sick, and was supplied copiously with tepid water by a friend. I saw him about two hours afterwards, he was then strangely confused in his head, and exhibited symptoms of inflammation of the brain, and lining of the stomach, accompanied by involuntary shudderings and a

hot skin. I got him bled copiously at once, and ordered him an opitate after the operation, and he got perfectly well in a short time. Now in this case, if we had waited for some specific remedy, the young man would probably have died.

There are other poisons which endanger or destroy life, by producing inflammation of the mucous membrane of the stomach or intestines. I have seen such inflammation produced by giving large and frequent doses of *colchicum*. A patient had been taking as much as ʒiij of the wine of the colchicum seeds in the day; he had unfortunately continued the medicine after it had produced nausea: and when I saw him for the first time, he presented all the symptoms of acute inflammation in the mucous membrane, both of the stomach and small intestines, in the last stage, and expired within an hour or two from my visit, entirely from an over dose of colchicum. Carefully watch the effects of all active remedies, that they may be timely withdrawn. Never let your own conscience tell you that you have lost a patient from neglect. I have seen other patients in jeopardy from the incautious use of colchicum, but no other case was fatal. This medicine, like some other narcotics, sometimes produces such an extreme shock of the whole system, along with inflammation, that you cannot treat the latter on the ordinary principles of inflammation, in a word, you must sustain the patient by cordials and opiates, while the sunk pulse, the cold skin, and weak respiration remain.

With respect to the different preparations of *antimony*, particularly the tartarized antimony and the antimonal powder, they occasionally produce all the symptoms of muco-gastritis and muco-enteritis, especially when combined with drastic purges, which are still far too frequently prescribed. Here also the general shock produced on the system is sometimes so great that bleeding would be very wrong at first. It is said on the Continent, especially in Italy, that the mucous membrane of the stomach has been found completely blanched in those cases in which large doses of this medicine had been given. But I have seen some cases which have terminated fatally from more minute doses, where the vestiges of inflammation were distinct after death. There is another exception to the use of blood-letting in inflam

mation of the mucous membrane of the stomach, where it is suddenly produced by the too copious use of *ardent spirits*. The countenance is often, at first, pale, the pulse feeble, aud the skin cold, the breathing oppressed, and the pupil contracted. In such cases, the abstraction of the fluid from the stomach should be the first thing, and it may be done very effectually and safely by a syringe. Patients frequently die from inflammation suddenly and extensively set in upon the mucous membrane of the stomach. But perhaps the rapidity with which life is destroyed in such cases, may depend on some change which has taken place in the constitution of the blood, and its subsequent effects on the brain and nervous system. It appears from experiment, that ardent spirit is rapidly absorbed from the stomach, as if by a kind of elective attraction.

TREATMENT OF ACUTE SERO-ENTERITIS AND PERITONITIS.

There are *two stages* in sero-enteritis and peritonitis; the stage of excitement and the stage of collapse. In the stage of excitement you have the hot skin, the quick and resisting pluse, and the local pain; the breathing is quick and anxious, but not feeble. When the stage of collapse comes on, the pulse becomes remarkably feeble, and still more rapid; the respiration hurried, and very weak. The extremities are cold and clammy, and the abdomen blown out, almost like a bladder. Now it is during the first stage that bleeding must be employed, and the effect which that bleeding produces must be alone regarded. If you find that after you have drawn ten, fifteen, twenty, or even thirty ounces of blood, the patient is not brought to approaching syncope, go on steadily till you produce that effect; do not, I beseech you, stop short in the middle; proceed boldly in the good work, and the general result will raise your character in the public estimation, for, aided by subsequent means, then your practice will be highly successful. In such examples, I can most truly assert that I hardly ever lose a patient when seen at the commencement.

After you have bled the patient to approaching syncope, give him a full dose of opium, at least three grains, in a soft pill, as soon as ever he recovers from the faintness; I have never seen a

practice which, in its success, was at all comparable to this, repeated if necessary. You should have the opium ready, in the form of a very small draught, containing 100 or 120 drops of the tincture, or a soft pill, containing three, four, or five grains, so that as soon as the patient rallies from the shock, you may give it to him, and then leave him perfectly quiet, for two or three hours, and he mostly falls into a sound sleep. On visiting him, you will often be delighted to find his skin warm and moist, his tongue moist, his pulse soft, no pain, in fact all the signs of convalescence. But it sometimes happens that you have occasion to bleed again ; but do not, on any account, wait longer than three or four hours; that, indeed, ought to be longest period which you ought to wait, and if you then find that the skin is hot, the pulse quick, the breathing hurried, and that there is pain on pressure, you must bleed in the same decisive way as before, and give, after the second bleeding, about two grains of opium with two grains of calomel. Visit the patient again at the end of two or three hours, and bleed again if any signs of inflammation exist, and afterwards give one grain of opium and two grains of calomel. It is scarcely ever necessary to bleed after the third time, in the most severe forms of serous abdominal inflammation, if you follow the plan I have directed, and far more frequently, only a first or a second operation will be requisite, so that the quantity of blood drawn under this plan is ultimately less than that taken ineffectually in small repeated blood-lettings. Do all that is to be done in eight or twelve hours, and not occupy forty-eight hours, or more, for the purpose, as is too frequently the case. Treat the patient as mildly as possible afterwards.

There is one circumstance which I wish you to attend to particularly, respecting the use of opium, namely, the state of the tongue. I have never found opium beneficial, except where the tongue was moist ; if you put your finger on the tongue, and find that there is a degree of moisture left upon it, then you may expect the opium to be useful after venesection ; but if you find the tongue dry and glazed, as it is in some specific fever, opium will never be of much benefit, especially if the brain be consentaneously affected. When large quantities of blood have been

lost, hæmorrhagic re-action, or excitement often follows, and opium is extremely useful in preventing the occurrence of that condition which is so apt to renew the inflammation. In hæmorrhage, after delivery, and in all cases where patients have bled much from accidents or operations, opium is of the greatest use in this way. The effects of opium, in the affection which I am at present considering, appear to be those of preventing the return of the hæmorrhagic re-action, and the return of the pain; besides, it acts on the skin by inducing diaphoresis, while it causes the patient to fall into a quiet and refreshing sleep. If you do not give opium after bleeding the patient to approaching syncope, when you return to him in the course of an hour or two, you will find that he is worse than before, the hæmorrhagic re-action having been established and the inflammation aggravated thereby. Before I knew the good effects of large doses of opium I lost many patients in acute inflammations, although I bled them copiously enough.

But what are we to do with *purgative medicines?* I say, generally, do not give them at all until the inflammation be removed. In the early part of my practice I gave them, because I was directed to do so, but since I have trusted entirely to my own observation, I have given up the use of purgatives altogether, until the inflammation is removed, except in those cases where the colon is surcharged with fæces at the time of the attack, and that I remove, in the first instance, by the administration of a large aperient enema, which is then, certainly, often an excellent auxiliary. Constipation is the effect and not the cause of inflammation of the serous membranes of the bowels; and, except in the case just mentioned, it is of no importance if the bowels be not opened for the first day.

The late Dr. SAUNDERS used to say, emphatically, "open the bowels by the lancet;" and certainly, in these cases, there is no purgative so good as the lancet. If they do not act under the influence of bleeding carried to relaxation, they will frequently do so with a little cold drawn castor oil, after full doses of the opium; the last of which frequently acts as an aperient in examples of this nature, its operation being thus modified by the

condition of the body at the time of its administration. Sometimes I have been called to females labouring under this affection who have experienced a great desire to go to stool, but who could void nothing; I have examined the rectum, and generally found it loaded with hard dry fæces; these have been removed first by the handle of a spoon, and next injections have been used till the colon completely delivered its contents. I have known small repeated doses of calomel relieve the bowels in such cases when common means failed. I mentioned before, that in all cases of seeming enteritis, you should make a point of ascertaining whether or not patients have hernia; for in the course of my experience, I have known more than a dozen cases in which the hernia had been overlooked, and the patient unfortunately treated simply for enteritis. A man was sent into the hospital, supposed to be labouring under low fever; he had vomited daily for nearly a week, and during that time he had not had an alvine evacuation. On examination, I detected a hernia. Mr. WALNE performed the operation very skilfully, and though the intestine, which had been strangulated, was, when exposed, almost as black as a hat, yet the patient recovered very well.

Peritonitis requires the same treatment as sero-enteritis. The great difference between the peritonitis of child-bed and common peritonitis appears referrable to the irritable state of the nervous system, and to that more tender condition of the abdomen, so that the inflammation generally runs a more rapid course, and requires correspondent firmness and activity of treatment. If the first six or eight hours be lost in such instances, life is most frequently lost; but if that time be properly employed, nineteen cases out of twenty will recover, if the subjects be organically sound before the attack, and if the treatment be prompt in the first instance and proper in all respects throughout.

There are some cases of peritonitis perhaps necessarily fatal, such as arise from *ulceration* of the mucous membrane of the intestines, which, as soon as it touches the peritoneal coat, brings on an acute form of inflammation, which commonly runs a fatal course in about forty-eight hours; nothing stops its pro-

gress, as far as I have seen. There is another cause of peritonitis which is generally fatal, but not necessarily so, it is a *tubercular state of the peritoneum.* I may relate a case to you of this kind:—A child became very unwell, his face pallid, he wasted very much in his extremities, and his belly grew large; he had occasionally uneasiness when he passed his motions. By advice the father sent him to the sea-side, and there he seemed to improve a little, but he returned in a steam-boat, the motion of which alarmed and sickened him; he, however, reached home, which was little distance from town. His parents being alarmed, sent for me, but he died before I reached the house. Suspecting tubercular disease from the past history, and wishing to ascertain the cause of death, that if possible I might instruct myself in order to be more useful to the living, I requested an examination, which was granted, as the intelligent parents had other children whose lives they of course valued most dearly, and who might by possibility, be liable to similar affections, which once really known might be prevented from attacking the survivors. When the finger was passed lightly over the surface of the abdomen little knots could be felt, which I suspected were tubercles on the peritoneum. On further examination, I found hundreds of these tubercles on the peritoneal surface. They do not, in the first instance, generally appear to be dependent on inflammation, but they often excite inflammation ultimately. But though many of these cases are fatal, yet I have known some recover, and recently I saw a lady who had apparently these tubercles connected with inflammation, but who recovered from the latter, and now remains tolerably well. You must in these cases, give only the mildest aperients.

TREATMENT OF SUB-ACUTE MUCO-GASTRITIS.

This is a form of inflammation which is very common. You must leech the epigastrium; put on twelve, or more leeches on the first day, and open by very mild aperients, as gr. iss. of calomel with gr. iv. of rhubarb in the day, followed by a small dose of cold drawn castor oil, or infusion of senna with manna; at the same time allow only the blandest diet. You must repeat

the leeches daily till the pain be entirely removed ; that is the best general rule. I would say, the same treatment should be adopted in the sub-acute muco-enteritis. I do not recollect that I have lost a case of sub-acute muco-enteritis when I have seen the patient early ; yet I have seen several cases terminate fatally where they had been neglected in the outset or progress, and on examining the bodies after death, have most frequently found ulceration in some portion of the ilium. The French physicians now mostly condemn the use of aperients in inflammation of the mucous membrane of the intestines ; but I have found the mild ones already mentioned productive of much good.—When, however, any irritation is excited by them, they should be omitted, and especially if hæmorrhage take place from the mucous surface of the intestines, for then nothing is more injurious than the employment of purgative medicines, while that of opium is almost a sovereign remedy in conjunction with absolute rest and a light diet.

TREATMENT OF SUB-ACUTE SERO-ENTERITIS.

Early general blood-letting, succeeded by local blood-letting, opium, enemata, and gentle laxatives, with a strictly antiphlogistic regimen, are the best measures. In all abdominal inflammations, it is better to avoid the early application of blisters, for then they are not serviceable, and by their operation on the surface you lose the test of the presence or absence of the inflammation, namely, pain, or the contrary, on pressure ; but blisters are useful if the inflammation put on a more chronic appearance.

TREATMENT OF INFLAMMATION OF THE MUCOUS MEMBRANE OF THE LARGE INTESTINES.

The disorder called *dysentery*, is an inflammation especially seated on the mucous membrane of the sigmoid flexure of the colon and upper part of the rectum ; sometimes, however, it extends into the mucous membrane of the small intestines. Occasionally there is a high degree of fever, and great local disturbance ; yet the patient is often chilly in the onset, and if you see him then, put him into a hot bath, and give him a full opiate

afterwards; the attack often terminates by a copious perspiration. But if you are called after the stage of excitement has taken place, the pulse hard and quick, and the skin hot, you must bleed the patient at once to approaching syncope, and afterwards use local blood-letting by leeches, which generally has a most excellent effect. There are some cases of an intermediate form, in which the pulse is not so quick or the skin so hot, nor the local disturbance so distressing, as in the extreme form. I had, in October last, an attack of this form of dysentery, my pulse ranging from 80 to 100; but the tormina and tenesmus were severe and frequent; I was advised to try calomel and opium till the mouth became affected: it happens that calomel sometimes produces the most profound relaxation, which is worse to bear than pain; it did so in my case, and I requested that it might be given up on that account. I was bled repeatedly by leeches, which were applied as many as five times over the abdomen, and at each time with the greatest relief. At the instance of Dr. Ayre, I used an opium suppository; before I did so I was passing mucous stools about every half hour, and afterwards I only passed one in eight hours. It was curious, in my own case, to observe how the balance of the secretions was lost and restored; at first, and for some days after the attack, the secretions of the liver seemed suspended, and those of the skin and kidneys much diminished, while the work of the mucous membrane of the large intestines was greatly increased, as the copious relaxation of mucus mixed with blood showed; but as the affection of the mucous membrane of the large intestines abated, the secretion of bile became copious, the skin became moist, and there was a plentiful flow or urine.

It has occurred to me to see many cases of dysentery, in London, and I have found that repeated leeching, with full doses of opium introduced into the rectum under the form of an enema or suppository, is the most successful plan of treatment, aided by a little cold drawn castor oil occasionally. Leeches seem to have a decided influence on this inflammation when used early, and repeated as long as the pain remains. The common method of treating dysentery is by exciting ptyalism; the cases which

occurred in the Penitentiary were treated in this way, and generally speaking, it answers remarkably well. But I should now be disposed to adopt, preferably, the mode which I have just mentioned; but if I found the disorder did not yield to it, I would then affect the system rapidly by calomel, or some other mercurial.

There is one form of dysentery in which the fever is very often masked, the patient is greatly oppressed, the pulse being small and the breathing rather weak; but if you put your hand over the belly, you find that there is a concentration of heat there, though the extremities be cool or even cold. In this form of the disorder, there is generally an hepatic and a bronchial affection combined. If you bleed in such cases largely, they will terminate fatally, and you must, therefore, treat them by leeches, by opium, and calomel, aided by a gentle laxative now and then. I was informed, that an epidemic dysentery prevailed about Nottingham, and that those cases in which large bleeding was used mostly proved fatal, while those treated by leeches, calomel and opium, recovered; such a form of dysentery is denoted by a concentration of heat over the lower part of the abdomen, by a soft compressible pulse, by the great prostration of strength, and by the heat on the surface of the other parts of the body being rather low.

In all cases of dysentery, the strictest attention should be paid to the diet, for if you were to allow a patient to cram himself with every thing he desires, he would be almost sure to die. Be very careful to avoid the skin, husks, and seeds of fruit. When the stools are becoming fæculent, you may hail it as the first indication of recovery; these appear, at first, like bird-lime, or meconium, and all you have to do is to give a little cold-drawn castor oil, still regulating the diet attentively. If you fail to arrest the progress of the dysentery by local bleeding, repeated as long as the pain continues, and by opium, if you then affect the mouth by calomel and also fail, the affection generally passes on to ulceration, which is found in many places after death, with considerable thickening of the whole of the affected intestines

But be prompt and judicious in the beginning, and your success will be great in this disorder, as it occurs in this country.

LECTURE XIX.

AFFECTIONS OF THE MUCOUS MEMBRANE OF THE ALIMENTARY CANAL, AND INFLAMMATION OF THE LIVER.

THERE is an affection which is most commonly called infantile remittent fever, or worm fever, terms which are perfectly absurd, because they express nothing definite as to the pathology of this affection. It often happens, that when fever arises in children from a common cause, that it has distinct abatements towards morning, and distinct accessions in the evening, and throughout the greater part of the night; on that account common fever in them has been called remittent; but the adjunct is deceptive, inasmuch as it implies a vague notion of some peculiarity, without expressing its cause. In truth, what is called infantile remittent fever is nothing more than a common simple fever, or a common inflammatory fever. Sometimes it arises in children slowly, at other times it arises suddenly. When it arises slowly, it is preceded by distinct indications, of what some persons choose to call *constitutional disorder, or constitutional derangement*. But the fact is, if we take a clear view, it will be found, that this constitutional disorder is the result of some local disorder, and I once more repeat that there is no such thing as a constitutional disorder or derangement independent of a local affection.

The commencement of what has been so improperly called infantile remittent fever, sometimes consists in a slight irritation on the mucous membrane of the stomach; sometimes in a torpid state of the colon or liver; sometimes in a slight irritation on the mucous membrane of the small intestines, especially about the ilium, attended by a dry, husky, or a faded skin. What is called *marasmus* in children, and indigestion in adults, is commonly dependent on one or other of these conditions of the stomach,

liver, small or large intestines, with impaired functions of the skin. Now when a child is in that state called marasmus, the tongue is always furred ; if the stomach be the seat of the irritation, it will be red at the tip and edges ; if the irritation be in the small intestines, the stools will be more oleaginous than natural ; if in the liver, the bile is deficient or depraved ; and if the colon be in fault, the stools are less or more frequent than natural, less if torpidity exist, and more if any irritation exist on its mucous lining. Added to these indications, the skin always has an unnatural feel and appearance. In many cases, all the foremen-tioned parts are simultaneously or successively disordered. Well then, if a child be in the disposing condition or conditions, which I have just described, and if it be exposed to the influence of any of the common causes so often enumerated before fever is produced ; the main mischief falls upon that part, or those parts most faulty or weak at the time. In some causes you can distinctly trace in this way the origin of inflammation, but in other cases, local simple excitement only exists, with general simple excitement as formerly defined. Sometimes this fever arises suddenly, the child having been apparently in good health till the time of its appearance ; in such cases it is generally owing to some offending food, such as confectionaries or pastry, especially on birth days, or similar occasions, when children are indulged with an abundance of such things, which are apt to irritate at once the mucous membrane of the stomach, and, in their undigested passage through the bowels, the mucous membranes also, often indeed producing inflammation either directly as applied to the part, or indirectly by disturbing the nervous system at large, and that again disturbing the action of the heart, which ultimately operates on the capillaries of weak organs. If the affection be inflammatory, then you have all the external and internal signs of inflammation present. Acid in the drink and diet is a very prevalent cause of inducing irritation in inflammation in the primæ viæ of children. Sometimes worms produce a local irritation, sufficient to excite the heart's action, and thus become an indirect cause of inflammation. Sometimes this affection arises from a load of scybala in the colon ; and it generally at the same

time happens that the liver is torpid, there is a lack of bile, or it is of a bad colour. The fever thus induced may be simple, uncombined with any external or internal inflammation: but most frequently it is inflammatory, and the inflammation is usually seated in some portion of the mucous membrane of the stomach, small or large intestines, especially about the lower part of the ilium, but occasionally attacking the lining of the large bowels. If you attend to the symptoms which I have already described as characteristic of acute or sub-acute inflammation in these parts, you will be at no loss to detect the seat of the inflammation. The pathology of infantile remittent fever is explicable on common principles, as deduced from symptoms during life, and morbid appearances displayed on examination after death, the value of which are great, because, while they show the fallacy of abstract words, they communicate positive and useful information. Other parts may become implicated in the progress of this affection, and nothing is more common than to find an irritation of the air passages in combination with the inflammation of the mucous membrane of the intestinal canal, which often in its course produces mesenteric disease when protracted beyond the third week, but which not unfrequently leads to affections of the brain, especially in very young children, who often in that case die convulsed, where the intestinal irritation has not been timely controlled. You are, then, not to treat this infantile remittent fever as a mere name, but as a disorder referrible, like every other, to some particular condition or conditions of the body. Whenever you find in children the pulse quicker than natural, and the skin hotter, be on your guard as to the state of the mucous membranes and, in the progress of irritation there, watch the head also most attentively; but recollect this, namely, if you opportunely remove the irritation from the mucous membranes, you will mostly prevent an attack on the brain.

TREATMENT OF THE INFANTILE REMITTENT, OR THE WORM-FEVER, IMPROPERLY SO CALLED.

If the skin be dry and husky, or rough, immerse the child in a warm bath, and soap the surface all over; wash the soap com-

pletely off, and then rapidly rub the child dry after you have taken it out of the bath. Avoid heating or chilling the child afterwards; be sure to attend to this circumstance. Let the bowels be daily evacuated by some very mild aperient medicine: small doses of calomel once a day; the grey oxyd, or the hydrargyrus cum creta, with a few grains of rhubarb, may be given at bed-time, and this dose should be followed, on the next morning, by a little cold-drawn castor oil, or infusion of senna, with small doses of sulphate of magnesia. You should prescribe and inforce a bland, farinaceous diet, with water as a common drink. If the fever be simple, under this plan, with rest, and a regulated temperature, it will seldom be of more than a few days' duration. Be discreet and discriminating in regard to bleeding; do not advise it, unless the symptoms indicate inflammation, and then, if the mucous membranes alone be inflamed, local bleeding by leeches will mostly be better than general venesection. But if you find the fever inflammatory, and if the inflammation itself assume any acute form, then general venesection in the first instance will be necessary. Where, however, the inflammation has a sub-acute character, which is oftener the case, you need not employ general bleeding, but apply leeches, and the best rule for repeating the leeches is the continuance of the pain on pressure, accompanied by fever. Do not forget the application of leeches in the case of young children. Always staunch the oozing blood from the punctures completely before you leave the patient; for from a neglect of this rule, I have known examples in which children died from the constant, and, at last, copious draining of blood from the bites. In infants, leeches, should always be applied over hard parts, such as the temples or breast bone, since pressure can be made more efficiently there.

I have repeatedly spoken strongly against the exhibition of harsh purgatives, and they are more exceptionable in children than in adults; for, in the latter, the mucous membrane is more irritable. By the recommendation of the late Dr. JOHN CLARKE, calomel was given in large and repeated doses in the diorders of children. But I am perfectly convinced that the practice, generally speaking, is a bad one. The same observation is as applicable

to large doses of jalap, salts, and other purgatives, as to calomel itself.

It often happens to me to be called to children labouring under the infantile remittent fever, and, as I always make a point of examining the stools where calomel has been previously exhibited, they often present a greenish, curdly, and oleaginous appearance. These stools are said to require the use of mercury; but I reply that they are the product of the mercury before given, and would be maintained if any more was daily given. So true is this, that they soon become natural when the mercury is wholly omitted. In such instances, I generally prescribe a little almond milk, with a few grains of carbonate of potash, and the child soon gets well. The largest doses of calomel which I now prescribe, are three grains in the course of the day, sometimes only one grain, frequently two, and I am sure that they answer infinitely better than large doses for children. When you have reduced the force of the fever, you should omit the calomel altogether, and while you still assiduously manage the diet, drinks and temperature, let the subsequent medical treatment be mild; for negative means are then the best, as the efforts of nature are quite sufficient for recovery, provided all opposing circumstances are removed. One of these opposing circumstances is officiousness of nursing and of prescription, which you must be mindful to avoid whenever fever is fairly on the decline.

One fact which I ought to have mentioned respecting calomel, is the extreme relaxation which it sometimes produces. When you find a child becoming pale, sick, or faintish, after or during the operation of calomel, you must be cautious how you continue it; for although such an effect may be very useful at the beginning of a fever, yet it is to be avoided afterwards. When the skin becomes cold, and while the stools exhibit a copious secretion of unnatural mucus, it is generally the product of the irritation from calomel, and will disappear when you withdraw that medicine. Hæmorrhage sometimes takes place from the mucous membrane of the intestines, especially when much irritated by drastics. Absolute rest in the recumbent posture, a very bland diet, and an occasional opiate, are the means which I have found so suc-

cessful. You should, in such cases of hæmorrhage, avoid all purgatives. I knew a medical man who had such an hæmorrhage, and he was on the point of taking a mixture of infusion of roses and sulphate of magnesia, and I believe, that if he had done so, it would have killed him, judging from what I had previously observed. Keep the patient perfectly still, and in the recumbent posture, and adopt a light diet, as I have already recommended. If the tongue be moist, and the pulse be quick and feeble, give a full dose of opium, as 30, 40, 50, or 60 drops, according to the circumstances of the case, and it will have an excellent effect. Sometimes 10 or 20 drops will do, if the patient have not lost much blood; but if the patient have lost much blood, and is in a state of restlessness, tossing about the bed, he may die from the exhaustion thus superinduced, if you do not give him opium in full doses.

Inflammation of the mucous membrane of the small or large intestines is very apt to recur upon a slight removal of the exciting cause in children; you must, therefore exclude all sorts of indigestible food, and particularly caution the attendants against over exertion and a chill of the surface.

HEPATITIS, OR INFLAMMATIOM OF THE LIVER.

What appears to be recently an acute or sub-acute degree of hepatitis, is often the product of a chronic torpor or chronic inflammation. If you trace back the history of an acute or sub-acute inflammation of the liver, you will frequently find that the patient laboured under a chronic inflammation, or a chronic congestion of that organ, a state distinguished by the torpid or defective secretion of bile. There is often an hereditary tendency or predisposition to all affections of the liver. I am sure I could adduce many cases to prove this; though the tendency is far more frequently acquired from the use of strong drinks, the abuse of mercury, and the influence of climate. Several symptoms combinedly indicate inflammation of the liver, but there is only one on which I would fully depend, which is pain on pressure in the region of the large or small lobe of the liver. When the liver is acutely or sub-acutely inflamed, there is fever existing at the

same time, the skin is hotter and the pulse is quicker than natural; but the fever may be absent in chronic inflammation. Pain, therefore, on pressure in the region of the liver, with fever, is diagnostic of an acute or sub-acute inflammation. The pain is sometimes so slight in sub-acute inflammation of the liver, that you might deem the complaint of no importance were you to be entirely guided by that circumstance; nay, sometimes when you ask the patient if he has any pain in his side, he will frequently say no, but if you be minute in your inquiries, you will find that there is pain felt by making pressure on that organ, especially if you desire the patient, at the same time, to take a deep inspiration, for by so doing he forces down the diaphragm, and with it the liver. Sometimes there is pain about the scapula and clavicle; sometimes the patient cannot lie upon the left side, at other times these symptoms are absent. Sometimes there is vomiting, but it is sometimes absent; sometimes there is a cough, but it is also sometimes absent; an anxious hurried breathing is another symptom, but that is absent in some cases. There are other symptoms more constant than these, such as the appearance of the stools, which may exhibit either a deficiency or depravity of bile; the urine is often tinged with bile; there is also, occasionally, a yellowness of the conjunctiva, or a dirty hue, and the patient's spirits are apt to be depressed. Occasional chilly feelings are not uncommon in inflammation of the liver, even where no suppuration has taken place. The peritoneal coat is more frequently inflamed than the substance of the liver in this country.

TREATMENT OF ACUTE AND SUB-ACUTE HEPATITIS.

Sometimes the inflammation is seated in the peritoneal coat of the liver, at other times in its substance, and in the latter case the pain is more indistinct on pressure than when seated in the peritoneal coat. General and local blood-letting are the best means for removing this affection. Purge the patient with calomel and salines daily; if the inflammation be acute, after copious venesection, give three grains in the evening, and the same quantity in the morning. Reduce the fever and the heat of the skin

by blood-letting, and moderate doses of calomel, with saline purges, will do the rest, provided the diet be spare. But you may advantageously conjoin colchicum in the doses, and with the precautions before named. It often happens that the acute or sub-acute inflammation being reduced, it assumes the chronic character, and then the only principal evidence which you have of its existence is, pain on pressure. In many of these cases it is necessary to affect the mouth by calomel, in conjunction with rest, local bleeding, blistering, and spare diet. Never allow a patient to go about whilst he has any pain remaining in the region of the liver; but adopt the plan already laid down, and insist on absolute rest as an essential part of it, you will generally succeed. Many chronic inflammations prove fatal from patients walking about, many cases, I say, which would do well were rest strictly observed. Beware of copious and repeated blood-letting in old persons, labouring under hepatic affections, for if the blood-letting be carried too far they never recover from the shock, but drag on a miserable existence afterwards; be sure also to avoid the free or repeated use of mercury in organic diseases of the liver, for it breaks up the strength irretrievably, and, so far from relieving, generally aggravates local affections of that nature.

CHOLERA MORBUS.

There is an affection connected with the state of the liver and mucous membrane of the aliamentary canal, to which I may here advert with propriety; it is what has been called cholera morbus, another abstract word in physic, which has done much harm, by having led many individuals to suppose that one and the same pathological conditions are comprehended under it, but this is not the fact. Cholera morbus is an affection depending on different pathological conditions, and first on a congestive state of the liver, on simple excitement of the liver, or on an inflammatory condition of that viscus, always associated with some affection of the mucous alimentary lining. These conditions may arise from a peculiar, or from a common remote cause. What might be called common cholera arises from a common cause, from a common depressant, a stimulant, irritant, or interruptant. It

arises sometimes from a peculiar cause, some unknown condition of the atmosphere, produced, perhaps, by the decomposition of certain vegetable and animal matter, or vapours impregnated with the products of such decomposition, such as are termed malaria. Cases have occurred to two friends of mine, which seem to show that cholera does arise sometimes from the influence of malaria, or marsh effluvia. The one was in India, attached to a certain division of the army, which, in their march to the interior, encamped in a low level country; cholera broke out amongst the troops. It struck the commander that it was owing to some exhalation from the soil; he therefore removed the camp to some rising ground at a little distance, and the cholera disappeared. The other fact was related to me by the captain of an Indiaman: his vessel was lying at the island of Ceylon; the wind was blowing off the shore, and cholera made its appearance amongst the crews of the adjacent vessels. Suspecting that the disorder arose from the miasma of a remote marsh, he ordered his crew to keep below as much as possible early in the morning and late in the evening; he regulated their habits strictly, and while many died in other ships, his crew completely escaped the ravages of the cholera.

With respect to cholera, I repeat, if we investigate its pathology, we shall find that it does not depend on one, but on several conditions. One form of cholera occurs, namely, vomiting and purging, with spasms or griping pains, accompanied by a cold skin, a feeble pulse, a weak respiration, a blue or leaden lip, spasms of the lower extremities, and occasionally of other parts. This form is connected with congestion of the liver, of the mucous alimentary lining, and likewise of the mucous membrane of the bronchia, the heart having sustained a shock, and the head being occasionally then congested too. If a man have a hot skin and a quick pulse, with vomiting and purging, he is still said to have cholera morbus, but in the first form it is essentially different from this, and requires a very different treatment. The first is, in fact, only a variety of congestive fever, or congesto-inflammatory fever, while the other is a disorder either of simple excitement or of pure inflammation of the mucous membrane of the

aliamentary canal and liver. One gentleman, who disturbed his stomach by indigestible food, exhibited all the marks of congestion about the head, the liver, and the bronchial lining, while he had also a vomiting and purging, and I believe that his life was saved only by the prompt application of the hot air-bath. The other form of cholera depends, as I have said, either upon simple excitement or actual inflammation, and if we examine bodies after death we shall find, in the last-mentioned case, every proof that inflammation had existed in the liver or mucous lining. In the congestive, or congesto-inflammatory cases, the stools are excessively copious and mucous, like rice-water or gruel, and matter of the same kind is vomited; but in that attended by simple excitement, bile is both vomited and passed by stool, a circumstance too which occurs in the least formidable cases of the inflammatory kind. Comprehend the pathology of the mucous membranes and of the liver, if you wish to clearly understand the nature and treatment of cholera.

THE TREATMENT.

In that form of the disorder which I first described, namely, the congestive, or congesto-inflammatory, nothing gives the patient so good a chance as the immediate application of the hot-air bath, for by it you restore the balance between the quantity of blood circulating on the surface of the body and in the interior, which is lost and ought to be restored, not only between the surface and the centre, but between the venous and arterial systems. As a medicine for the promotion of the same object, opium combined with brandy is certainly the best, while the first shock, or collapse, continues. But after the heat has been restored to the surface of the body, then you must immediately omit both, and regard only the inflammatory condition which may follow, and which may require to be treated accordingly. It is only in the first stage, which I have described, that the stimulant plan can be at all admissible; even then, if you find the stomach irritable, you must introduce the opium as a suppository, or enema, by the rectum, while you administer the

brandy pure and in small repeated quantities by the stomach till the shock be over. After you have done this, give small repeated doses of calomel, with a view to excite re-action, but if they be returned, one or two large doses ought to be substituted, which sometimes remain, and answer the purpose. When reaction has been established, the affection may become either that of simple excitement or inflammation, and must be treated according to its character. The fluid vomited and purged in the worst forms of cholera is not bile, as was first shown by Dr. JOHNSON, but mucus, the secretion of which is sometimes so very large as to sink the strength extremely; and then cordials, and full and repeated opiates, will sometimes save the patient, even when, apparently, in the jaws of death.

Frequently this affection is attended by an inflammation of the mucous membrane of the stomach, and small or large intestines. I attended a young woman, a short time since, who had a distinct inflammation of these parts in cholera. If the inflammation be acute, and fever developed, you must treat it actively; if sub-acute, then milder measures will succeed, especially local bleeding by leeches. The secretions are sometimes very acrid, and then a mixture of infusion of rhubarb, with a little magnesia, has a good effect, or the almond milk, with a few grains of carbonate of potash, and a few drops of laudanum. In all cases, however, you must recollect, that a collapse may suddenly come on, and therefore be careful not to push your depletion too far. In a state of exhaustion consequent on copious evacuation, opium, with cordials, is the best remedy. I was once requested by an apothecary, to visit a patient who had cholera morbus, and who was deemed by him to be dying, indeed when I saw him so it appeared, for his skin was cold, he was stretched out almost like a corpse, at full length upon the bed, his pulse fleeting, his respiration very feeble, his lip quivering, and his face sunk. I had his mouth opened, and forced down a full dose of opium in brandy; I ordered it to be given in smaller doses afterwards, and I found, to my surprise, on the following day, that the man was convalescent. In the collapse that follows

the cholera morbus, you may often save the patient by the administration of opium and brandy, and I believe there is no cordial half so good in the apothecary's shop as brandy.

I hope that I have said enough to show you that the affection called cholera morbus ought to be referred to different conditions, and to undergo correspondent changes in its treatment.

DIARRHŒA.

There are five causes which most frequently appear to produce diarrhœa:—

1. Inflammation of the mucous membrane of the intestines, about the upper part of the colon, the symptoms and treatment of which have been before described, when that inflammation is acute or sub-acute.

2. Diarrhœa may arise from scybala in the colon. The patient complains of an uneasy sensation in the lower part of his belly, and if the abdomen be not loaded with much fat, you can distinctly feel the hardness and irregularity of scybala there. If he have not an evacuation daily, the colon becomes loaded, and proves a source of irritation to the mucous membrane, and that irritation is sometimes extended to the small intestines. A copious purging often takes place at last, but the stools are like dirty or muddy water, with lumps of fecal matter floating in them, or settling to the bottom. An overloaded state of the large bowels may exist for many weeks, months, and even years. A few grains of calomel with rhubard, followed by cold-drawn castor oil, or the compound decoction of aloes, will frequently succeed in unloading the colon. The compound decoction of aloes would be a very good medicine if it did not contain so much spirit; in the way which the college has directed it to be perpared, it almost amounts to dram-drinking. Lessen the quantity of spirit in your preparations.

3. Diarrhœa is often produced by some offending ingesta; nothing is more common than for diarrhœa to appear in children who are indulged with much confectionary, and in adults who are fond of eating pickled pork, or the like. You may relieve this variety of it by first getting rid of the offending matter through a

gentle aperient, or, if this has already been done, you may quiet the irritation of the bowels by the chalk mixture, or the almond mixture, with a small quantity of carbonate of potash and a dose of opium. If, however, the irritation should lead to an inflammatory action, you must treat it in the manner before recommended.

4. A fourth cause of diarrhœa is a copious secretion of bile, and this is what is often called bilious diarrhœa, and sometimes occurs in conjunction with cholera. It generally occurs in summer, or in the autumn when the atmosphere is warm, or when there are great and sudden vicissitudes of temperature. Bland diluent drinks will be all that are necessary at first, and you may quiet the irritation afterwards by an opiate.

5. The fifth cause of diarrhœa is a congestive state of the liver and mucous membrane lining the intestines. Thus, if an individual, who is very weak, goes out in the cold, so as to be chilled, the blood retires from the surface, and is proportionably accumulated about the liver and intestines. There appears to be a very great sympathy between the skin and the internal parts of the body, and we see daily, that changes produced in the functions of the one almost immediately influence the functions of the other. The use of the hot air bath, or the warm water bath, followed by a dose of calomel and opium, will generally succeed in removing this kind of diarrhœa.

LECTURE XX.

INFLAMMATION OF THE KIDNEYS AND BLADDER.

THE *tendency* to inflammation of the kidneys and bladder is sometimes *hereditary*, at least I have known many families in which inflammation of the kidneys has been very common, and others in which inflammation of the bladder has been the predominant disorder. In those families, the members of which are subject to the gout, affections of the urinary organs, acute, sub-acute, or chronic, are apt to take place. Perhaps this may partly be owing to the depraved secretions, so often attendant on gout. When

the mucous membranes are hereditarily delicate, when the skin is remarkably fine, or coarse and rough, in the one resembling doe skin, in the other dog skin, in both descriptions of persons inflammation of the internal mucous membranes is liable to occur especially of the urinary system. This state of the skin, and of the internal mucous membranes, may be, and often is created by all these remote causes, which tend to break up the general strength. When the strength breaks up, the first evident change is a faded, sallow appearance of the skin; and the next change is some disturbance in some of the internal mucous membranes; in one person it falls upon the mucous membrane of the air passages; in a second, upon the mucous membrane of the stomach, of the small or large intestines; in a third, it falls upon the mucous membrane of the urinary organs, and occasionally we have proof of its existing upon all the internal mucous membranes at the same time. The tendency, therefore, to these affections is frequently *acquired*, and usually through irregularities of diets and drinks, which not only tend to break up the general strength, but which disturb the secretion of the kidneys in particular. It is well known, not only that the stomach, liver, and bowels are simultaneously disturbed by errors in the diets and drinks, but that the disturbance produced is first displayed in the high-coloured urine, the secretion of the kidneys becoming depraved, and operating at last as an irritant. In civilized society, we work the urinary organs excessively. Men gorge themselves with a very complicated diet and drink, certainly taking thrice the quantity of fluid necessary, and thus giving the kidneys three times as much work as they ought to perform. Acid and stimulating drinks especially tend to produce such disturbance in the function of the kidney and bladder, and bad water is a frequent cause of creating irritation there. Whether the tendency be hereditary or acquired, the exciting occasion being applied, the inflammation may appear suddenly to arise, but if you trace its origin minutely; you will most frequently find that it has been preceded by some chronic disorder, by some depravation of the quality of the urine. Most acute and sub-acute inflammations are preceded by chronic disturbance in the part attacked. The *exciting causes*, *cold* is a

very common one, if it be applied to the whole surface of the body, so as to produce an universal chill, for the blood then retires from the surface, there is a loss of the balance in the circulation between the external and internal parts of the body; what the external parts of the body lose, the internal parts gain, especially about the right side of the heart, and that organ is thereby excited, roused to what is called re-action, and if the predisposed part be the kidney or bladder, the one or the other becomes the seat of the inflammation. Sometimes the inflammation arises from the direct application of a *stimulant*; thus, for example, if an individual work very hard in the heat of the day, he acquires a quick pulse and a hot skin, and if the kidney or bladder be the predisposed parts, in this way they might be more directly inflamed. In persons who walk far, and who have any latent weakness about the bladder or kidneys, an irritation is often set up there which sometimes passes on to inflammation. Thirdly, a local irritation may bring on inflammation of the kidney or bladder, such as a stricture of the urethra, enlargement of the prostrate gland, and long retention of urine, as I have repeatedly seen in cases of fever where the brain was concerned. Sometimes a stone sticking in the urethra becomes a cause of inflammation. Blows on the back are not an uncommon cause of inflammation of the kidneys; that inflammation, when chronic, leading to the formation of stone. I have seen several cases in which blows on the back were first the cause of inflammation and afterwards of stone. An irritant taken into the stomach, and acting on the kidney or bladder through the medium of the circulation, will sometimes produce inflammation. In this way it occasionally arises from the absorption of cantharides, when a blister is applied. Sometimes the inflammation of the bladder is produced by the propogation of the inflammation along the urethra to the bladder, as in a virulent gonorrhœa. Sometimes inflammation of the bladder is produced by the introduction of foreign bodies into the urethra, as bougies, when the system is in a highly susceptible state. The morbid secretion from the kidney itself sometimes produces irritation in the bladder, and I am satisfied that a torpid condition of the colon is often a cause of chang-

ing that secretion. Inflammation of the kidneys arises sometimes sympathetically from a disturbance of the stomach, liver, or bowels. Nothing is more common than to find sedentary females complaining of pain in their back, the urine being at the same time scanty and pink coloured, and if the remote disorder be not timely removed, chronic, acute or sub-acute inflammation of the kidney is the consequence; indeed, whenever such persons complain of pain in the region of the kidney, you may suspect that an insidious degree of inflammation is going on there, which may, if not subdued, eventually undermine the structure or the kidney. Surgeons should be extremely cautious in performing operations, connected with the urinary organs, when the skin is out of order, and when the mucous membrane of the aliamentary canal is at the same time, disturbed, for under such circumstances I have known even the introduction of a bougie give rise to serious inflammation and fever.

SYMPTOMS OF INFLAMMATION OF THE KIDNEYS.

When an attack of inflammation of the kidneys takes place of the acute or sub-acute kind, it is generally marked by the following symptoms:—1. Pain in the region of the kidney; that pain is far more distinct in the acute than in the sub-acute inflammation, and the fever is more urgent in the former; that pain is increased by a deep inspiration, by coughing, and by turning from one side to the other. It is remarkably increased by pressure, if made in two directions, behind and before, in the direction or region of the kidneys. 2. This pain generally shoots in the course of one or both of the ureters. It is a remarkable fact, that the inflammation sometimes suddenly leaves one kidney and attacks the other; this was the case with the late Mr. Edward Grainger. 3. A frequent desire to make water. 4. The urine is generally scanty and high coloured, although I have known instances where it was pale when the kidney is chronically inflamed. 5. There is a numbness, especially about the upper part of the thighs. 6. Pain, and retraction of the testicles. 7. Vomiting is sometimes present, but it is more frequently absent.

The fever which attends inflammation of the kidney or bladder, is sometimes like that arising from a peculiar case; in a word, it resembles the intermittent fever. If the inflammation be acute or sub-acute, then the fever is generally continued; there is not an hour in which the patient is without fever, his pulse being always quicker and his skin hotter than natural. If the inflammation be chronic, the fever sometimes intermits, the patient having a distinct cold, hot, and sweating stage, so that it appears at first like an ague; but it may be distinguished from the latter by the presence of the local irritation, by the irregular returns of cold shiverings, and by the longer continuance of the perspirations. Inflammation of the kidneys might be confounded with *lumbago*, but it may be distinguished by a little attention. In lumbago the pain is very peculiar, it is an aching pain, it is very difficult to describe by words the different varieties of pain, but persons who have been subject to rheumatism can distinguish that pain from any other. Patients who have had rheumatism and gout can distinguish the one pain from the other. Generally speaking, there is no fever attending lumbago, and there is the absence of all the combined signs of inflammation of the kidneys, besides, setting down or getting up affects the patient far more in lumbago. It is a very important thing in the investigation of disorders, to find out what a disorder is not, for that often leads to the discovery of what it is ultimately. You might confound it again with inflammation about the root of the liver, but if you make pressure on the region of the liver, beginning at the epigastrium aud carrying the pressure backwards towards the spine beneath the edges of the ribs, you will generally succeed in detecting it by producing pain there. You would have, in addition to the pain in that part, a diseased state of the bile, as shewn in the stools or in the urine. Lastly, be careful not to mistake an overloaded state of the colon for inflammation of the kidneys, as the pain often extends to the loins. The best guide will be an examination of the stools, taken in conjunction with the conductory of the presence or absence of those concurrent signs, which indicate inflammation of the kidneys.

SYMPTOMS OF ACUTE AND SUB-ACUTE INFLAMMATION OF THE BLADDER.

1. Pain above the pubis, and that pain increased by pressure. 2. Frequent and painful desire to make water. If the peritoneal coat of the bladder be inflamed, that pain amounts to strangury, and many persons, supposing the bladder to be distended, have introduced a catheter, and have been very much surprised to find no urine there; but if the mucous coat be inflamed, the pain is sharp and burning. 3. The urine is either retained, or there is a small and frequent discharge of it. If the urine be retained the bladder is very much distended, and then you can feel it distinctly above the pubis. If the mucous surface of the bladder be inflamed, you then invariably find a copious mucous secretion in the urine, and sometimes blood. There is a very close connexion between the bladder and rectum, and when the bladder is inflamed, there is often a degree of tenesmus. You might confound acute or sub-acute inflammation of the bladder, with hysteritis, or inflammation of the uterus. But this latter affection scarcely ever occurs, excepting after delivery, and is a very common circumstance within the first five days after that time. The kind of tumour which attends hysteritis, is very different from that which is produced by a distended bladder. The former is a hard circumscribed swelling, just above the pubis firmer than the distended bladder, and also smaller. If you have any doubt upon the subject, you have nothing to do but to introduce the catheter and you may be satisfied; if the tumour arise from a distended bladder, when the urine is drawn off it will subside, and with it the pain, but if from an inflamed uterus, the swelling and pain will remain. You are aware, no doubt, of the difference between suppression and retention of urine. In suppression of urine, the kidney does not perform its office, there is no urine secreted; but in retention of urine, the kidney continues to secrete, and the urine passes into the bladder, but is retained there. Sometimes a stone sticking in the uretus produces symptoms like those of inflammation of the kidney and bladder. I have known cases in which stones have stuck at once in both

ureters, and the patients have described the pain as shooting in the course of the ureters downwards towards the bladder.

MORBID APPEARANCES.

After death, when the kidneys and bladder are examined, they have presented the following appearances, where inflammation had existed. The proper capsule of the kidney is seldom found inflamed, but the whole substance of the kidney is more vascular than natural, and its structure more developed in many cases. Sometimes abcesses are found in the kidney, either with or without stone. Sometimes you will find the structure of the kidney completely destroyed, and only a thin capsule remaining, yet the urine has been secreted by the other kidney. It is no uncommon thing for abscess of the kidney to take place in inflammation of the kidney; the symptoms suddenly subside, and you think the patient is getting well, but if you examine the urine you will find that it contains pus; indeed a great deal of pus is sometimes passed day after day, the suppuration going on in the kidney until its structure be completely destroyed. Sometimes you find the cavities of the kidney completely plugged with calculous concretions. I have seen the model of the infundibula, pelvis, and commencement of the ureter, completely made by a strong concretion, and believe that the formation of stone in the kidney is more frequently dependent upon a chronic degree of inflammation there than is usually imagined. As to the bladder, you sometimes find a layer of lymph effused upon its peritoneal coat, gluing the bladder to some adjacent part. But it is about the neck of the bladder, that inflammation is most frequently found. When the mucous membrane has been the seat of the inflammation, you find it red, thickened, and pulpy, sometimes from the affection having become chronic; there is ulceration of the coats of the bladder, and communications are sometimes established between the bladder and rectum, a truly horrible condition.

TREATMENT OF ACUTE AND SUB-ACUTE INFLAMMATION OF THE KIDNEY.

You must at once arrest the progress of this affection by deci-

sive measures. If the patient be young and robust, abstract blood copiously from the arm, and by cupping in the region of the kidneys, but at the same time you must recollect, that the mode of bleeding is of much less consequence than the effect; you must bleed to approaching syncope, or till the pain be quite removed. If, after the bleeding, you give the patient a full dose of opium, you will at once remove the inflammation. Large doses of calomel, with moderate ones of opium, sometimes dissolve inflammations in a very surprising way, and especially when the kidney is inflamed. Mild aperient medicines should be given, such as cold drawn castor oil, small doses of the tartrate of sulphate of potash, or you may give these combined with the carbonate of potash, as an effervescing draught. When there is any irritation of the stomach, it is the best mode of giving them, with fresh lemon juice. Supposing that you wish to give ʒij. of the tartrate of potash, of ʒj. of the sulphate of potash, you might add a scruple of the carbonate of potash. Having these dissolved in a little water, add a table spoonful of lemon juice, and let the patient drink it whilst effervescing. It often happens, that a chronic inflammation will supervene on the acute or sub-acute one in the kidney; you must then enjoin rest, use local blood-letting, apply a blister, order a mild diet, together with bland aperient medicines, and you will remove it shortly. When you apply a blister, you must recollect to place a thin substance between it and the skin (a bit of lawn paper, or a bit of gauze) and do not let the blister remain on more than 10 or 12 hours; by attending to these circumstances, you prevent the occurrence of any strangury. Never allow a patient to go about, having any sense of uneasiness or pain on the region of the kidney, who has been lately the subject of an acute or sub-acute inflammation of that organ, if you do, it will wind up in a chronic disease, which may ultimately destroy the structure of the gland, or again produce an acute or sub-acute degree of inflammation. I believe that this circumstance was the cause of the death of Mr. Edward Grainger; he had two attacks of inflammation of the kidney; he recovered from the first, and was fast recovering from the second, but he was anxious to return to his duties as a lecturer. I remon-

strated with him strongly, and although I believe that he had a great respect for my opinion, yet his sense of duty was so high, that it overcame all my objections, and he returned in a debilitated state to the arduous office of lecturer in this school. The exertion fixed the chronic inflammation, broke up his strength entirely, and led to that fatal event which deprived the profession of one of its principle ornaments. I have seen many lives lost through anxiety to return to public duties; but a medical man should remonstrate in a decided manner against such a procedure, for if a patient go about with any chronic inflammation, it will almost invariably wind up in the destruction of the organization of the part or in a fresh attack of inflammation, which under such circumstances, often proves mortal.

TREATMENT OF INFLAMMATION OF THE BLADDER.

If the inflammation be seated upon the peritoneal coat, it will be attended by a higher degree of fever than if seated on the mucous membrane. You must bleed from the arm decisively; shave the pubis, and apply leeches there, and afterwards give a full dose of opium. It is astonishing how rapidly inflammation in many cases yields to an opiate after bleeding. The patient will be greatly relieved from the introduction of opium as a suppository into the rectum, or as an injection. The warm bath is an excellent auxiliary, especially when the skin is dry and husky. Much relief is also obtained from applying fomentations to the abdomen just above the pubis, and the best mode of doing this is to have a little flannel bag containing bran dipped in hot water, and applied as hot as the patient can comfortably bear it, but it should be covered by a napkin, which prevents the heat from escaping, and keeps the linen dry. In inflammation of the mucous membrane of the bladder, you must adopt the same measures as to bleeding, leeching, mild aperients, the use of the tepid bath, and bland diet. In most all acute and sub-acute inflammations, recollect that blood-letting, general or local, is the primary measure with which you must either wholly remove the inflammation, or so subdue it that it will yield to the secondary means afterwards employed. With respect to re-

tention of urine, it is often the consequence of inflammation of the peritoneal or mucous coat of the bladder, but it sometimes occurs independently of inflammation, and you relieve it by introducing the catheter. You should practice the introduction of the catheter so as to acquire dexterity. It is an operation which, when you are in practice, you should be able to perform with the greatest dexterity, but with the greatest delicacy, for most females have justly a horror of exposure, and if a man were a bungler, he would be obliged to resort to that extremity. Sometimes after the bladder has been enormously distended, a dribbling of the urine takes place, and if a man were not on his guard, he might be deceived by this circumstance; but he should examine the pubis, and if he find the bladder distended, then he should introduce the catheter. Retention of urine is sometimes produced by an overloaded state of the vessels of the head, and long retention aggravates that affection, and sometimes causes inflammation of the bladder. An attention timely to such things often prevents great mischief and misery. Suppression of urine generally is caused by an inflammation of the kidney; sometimes, however, from a paralytic affection of the kidney induced by arsenic. Now and then by stones sticking in the ureters. When inflammation has once taken place in the kidney or bladder it is very apt to return, and why? Because the kidneys and bladder are subjected to the irritating fluid secreted, and therefore the greatest attention to diets and drinks is necessary for a long time afterwards. Never neglect the slightest irritation in these organs, lest they become serious even from a short delay; and where patients have entirely recovered, recommend them to keep the surface warm, and to adopt that regimen best fitted to maintain the skin and internal mucous membranes in a healthy condition.

LECTURE XXI.

I NOW come to the consideration of that inflammation which involves often the internal, and always the external structures, namely, an affection commonly called

GOUT.

Gout has been viewed in systematic works as a specific disorder, strange and undefinable, as far as its internal pathology is concerned; but regarding it in an entirely different light, firmly believing it explicable on common principles of plain sense, I wish you, at the onset, to dismiss from your minds all preconceived opinions of its peculiar nature, and attend unbiassedly to the facts and inferences which I shall adduce. In this Lecture I shall endeavour to trace the origin, describe the symptoms, and illustrate the pathological conditions of what is called gout, and, having done this, I believe you will be enabled to infer, that it is not a peculiar affection, but one which comes perfectly within the limit of explored and known laws or principles.

The tendency to what has been designated gout is, like the tendency to almost every other affection, either hereditary or acquired. It has been said, that persons with large heads, broad chests, strong bones, and thick skins, are the most prone to gout. But the fact is, that you might reverse this description, and you would find in society many individuals who, having neither large heads, broad chests, strong bones, nor thick skins, are, nevertheless, the subjects of the gout. The *hereditary* tendency to gout exists in different degrees, and therefore the occasional, or exciting causes, act more powerfully on some individuals than on others; hence it is, that we find this affection, apparently under the same circumstances, appearing sooner in some cases than in others.

The appearance of the gout seems to be closely connected with the age of individuals; seldom, very seldom, appearing before the age of puberty. HEBERDEN, who practised extensively amongst the nobility, in whom the gout very frequently prevails, states that he never met with a case in which it occurred before puberty. I have known two persons, however, who were attacked with gout before that period. The principal reason, perhaps, why it seldom appears before that time is, in all probability, to be found in the abstinence from wines and other fermented drinks, and in the plain diet and regular exercise; for I

shall be able to show you, that the foundation of gout is usually laid by the habits of life begun and continued after puberty. The structure, however, at that time of life, may have some concern in the exemption. HIPPOCRATES mentions, that in his time eunuchs were not liable to gout, and he supposed that they were necessarily exempted from this affection; but the habits of these men were very abstemious in ancient times, for they were then kept in a state of slavery. GALEN in his commentaries affirms, that eunuchs were very liable to gout; and VAN SWIETEN has asserted the same thing; nor can we account for these opposite assertions, but by supposing that in the times of the two last writers, the habits of eunuchs had undergone material alteration, by which they had become subject to this affection. Men are far more liable to gout than women, and that, probably, is owing to the greater excesses in which the former indulge. Yet women are sometimes attacked by gout; it is recorded by SENECA, that the Roman matrons were often afflicted by this disorder; but this appears not to have been the case till towards the decline of the empire, from their indulgence in those luxurious habits, which were at that time introduced. SYDENHAM and HEBERDEN affirm the same respecting the common liability of females, who are intemperate, to the gout. No man can have practised extensively without having seen occasionally gout in female frames. The first time I ever saw gout in a female, was in the case of a lady whose appearance and habits were rather masculine. I have met with gout in some females, descended from an arthritic stock, who were most temperate in all their habits; but such individuals had sustained considerable mental distress, by which the stomach and general health had been disturbed prior to the occurrence of gout.

All the remote occasions which predispose to gout in the first instance, and which produce it in the next, operate by disturbing the mucous surface of the stomach, or small intestines, and at the same time the functions of the skin; and, associated with these disturbances, we generally find, that the liver is torpid or irregular in its secretions, the bile deficient or vitiated, or that the colon is torpid, not evacuating its contents daily and sufficiently. In many cases all the forementioned parts are consentaneously

affected. Now when any one of these internal parts is disordered, or when all are at the same time disordered with the skin, it is a law of the animal economy, that a remote inflammation may sympathetically arise in any structure of the body, internal or external. Under this law, what is called gout ought to be arranged, for it is only one of a series of inflammatory affections referrible to the same disorder of the internal mucous membranes of the alimentary canal, as I shall by and by more fully elucidate.

Gout is attended either 1. By a general plethora, or, 2. By a local plethora. Dr. CADOGAN, who has published some very sensible remarks on gout, says, that there are three *exciting causes*, 1. Intemperance, 2. Indolence, and, 3. Vexation, and you will often find that intemperance, indolence, anxiety, and over exertion of mind, tend powerfully to the production of this affection. The Greeks had an idea that Bacchus was the father and Venus the mother of gout; and certainly it often occurs, that this growing child may be legitimately or illegitimately traced to such an ancient parentage. Whatever contributes to break up the general strength strongly predisposes to gout, because it disturbs not only the skin, but the internal mucous membranes. Among such causes, few are so influential as too repeated devotions to Bacchus and Venus.

The exciting causes of gout may be most frequently traced to one of the following heads: 1. To some error in the kind or in the quantity of the drinks and diets. SYDENHAM, one of the best authorities, remarks, that more rich persons than poor have the gout, and the reason is obvious—their meals are more complicated, and they indulge in acid and other wines. CHEYNE, an old writer, has observed that there is an intimate connexion between acidity of the stomach and gout. It is certain in the cyder counties, where the people are in the habit of drinking largely of acescent drinks, that gout attacks the poor. It is said by an American writer, that in the West Indies, those persons who drink much of new rum are very subject to gout, because it contains the principle of acidity. Generally speaking, I repeat, that you may trace the appearance of gout to some error either of the diet or of the drinks. It is no unsual thing for a man to eat of five or six different dishes at dinner, and afterwards to drink five

or six different wines, and a continuance of such habits, combined with indolence, is a lmost sure to bring on an attack of gout. Indeed there are persons who, like certain philosophers of old, believe that the stomach is the seat of the gout, regularly prepare their apparatus for a fit, whenever they dine out on unusually good fare and cheer. 2. Another exciting cause of gout may be traced to a deficient degree of exercise. The influence of exercise in the open air on the process of digestion is most remarkable. Almost all sedentary individuals have what is so vaguely termed *indigestion* now-a-days. Such persons almost always have a feeling of coldness about their feet and hands, with some uneasiness about the stomach, both of which may generally be removed by proper exercise. 3. The suppression of accustomed evacuations is sometimes followed by gout, because such suppression is apt to disturb the liver, stomach, and bowels, especially hæmorrhoidal or menstrual discharges. 4. Depressing, or stimulating emotions of mind, may become the exciting causes. SYDENHAM says truly, that more wise men than fools are attacked by gout, because the minds of individuals of the former class are more liable to be disturbed, their existence being less animal, or, rather, more intellectual. Men in uncultivated society do really approach nearer to an animal than to an intellectual existence; and precisely as we cultivate the intellect, we are apt to increase that sensibility of the frame upon which so many remote occasions daily, nay, hourly operate. Disturbance of mind acts on the whole nervous system, and, through that system, greatly disorders in many cases, the functions of the stomach, liver, bowels, and skin, leading in this manner very often to attacks of gout. But if depressing emotions diminish the appetite, stimulant ones increase it, though, if the latter be too intense or long continued, they give rise to ultimate exhaustion. 5. A sudden wrench from accustomed habits of activity is sometimes followed by gout. There is no blessing in life so great as that of constant employment; those men are by far the most miserable who have nothing to do, and they the happiest who are in constant employment. Action is often only another name for happiness; many persons in the higher circles of life are notoriously idle, and that

idleness renders them more prone to gout than they otherwise would be. A man bears away the palm of happiness who is engaged in the pursuit of practical knowledge, and in no profession can he make himself more happy than in that which has for its object the alleviation of the moral or physical sufferings of mankind. Among other intruders, the gout is apt to pay its painful visitations, spoiling the preconceived happiness of worldly philosophers. 6. Evacuations of blood, or excessive purging, sometimes brings on an attack of gout, by disordering the nervous system, or mucous membrane of the stomach and bowels. 7. In like manner night-watching occasionally leads to gout, producing a defective state of the biliary secretion, and torpid state of the colon, with consequent irritation of some portion of the mucous surface of the primæ viæ. 8. Certain states of the atmosphere appear to favour an attack of gout, particularly a cold damp atmosphere, which effects first the skin, and then the stomach, liver, or bowels. Gouty patients are well aware how much their feelings are influenced by certain states of the weather, and generally enjoy the longest respites of ease during a fine summer. 9. Lastly, any local irritation, such as a sprain, may induce an attack in one strongly predisposed.

The foundation of gout, however, is laid in the internal parts of the body, in irritation seated in some part of the mucous tissue of the stomach or intestines, generally combined with some unnatural feel or appearance in the skin, and some irregularity of action in the colon and liver, which is mostly secondary. The affection of the stomach or bowels, may be either *primary* or *secondary;* it may be primary, in as much as these parts are sometimes the immediate or original seats of the irritation; or it may be secondary, as dependent on a previous affection of some remote part, especially of the brain and spinal cord. In truth, many of those affections which pass under the vague names of dyspepsia, indigestion, or disorder of the digestive organs, may often be traced to some affection of the last-mentioned structures. But whether they arise primarily or secondarily, their existence is necessary for the developement of the affection named gout. What is called gout never comes on with-

out being either preceded or attended by disorder in the stomach, liver, or bowels; and the external affection, termed gout, stands in the relation of an effect to the internal cause. Like many other inflammations, internal as well as external, gout arises thus sympathetically, and is therefore only a small part of a class of inflammatory affections which ought to be referred to one and the same pathological law or principal of connexion. The most familiar example of this law might be found in the eye; the stomach or bowels become disordered on their mucous surface, and inflammation appears about the eyelids, which become gummy and glued together, in the morning, by the morbid secretion from the meibomian glands. Trace the history of the case backwards, I say, and you will find that some disorder of the stomach, liver, or bowels, preceded this attack of inflammation in the eye. If you pursue your observation extensively, you will ascertain satisfactorily, that the same thing occurs, on the same principle, in every other structure of the body, for the fact of the occurrence of such an inflammation is not confined to the eye, no, nor to the great toe, but is, I repeat, equally perceptible or tangible in other parts or organs of the human frame. Divest your minds of prejudice; come to the inquiry with the singleness and simplicity of genuine philosophers, and you will arrive at this conclusion, in despite of the long established notions, the metaphysical absurdities of colleges and schools. Look at nature, and you will find that gout is no more peculiar than inflammation at the end of the nose is peculiar, for that, like the inflammation about the great toe, has generally one common origin—some disturbance in the stomach or bowels; but because some writers, in the dark ages, chose to say it arose from some peculiar and unknown cause, it has been still so considered, even from the time of GALEN, who avowed that gout depended on some peculiar condition of the fluids:—nay, I know of no subject on which common sense, and the common principles of pathology, have been so abandoned as on this, even in some huge modern volumes published on the disorder. I would say, that *gout is nothing more than an inflammatory affection which is seated in the structures adjacent to joints, and which is always*

preceded, or attended, by some disorder of the stomach, liver or bowels. The disorder is various; sometimes it is merely a slight degree of irritation on the mucous surface of the stomach, in some cases the irritation is really a low degree of inflammation in that membrane, or a similar condition exists, separately or combinedly, on the same continuous structure of the small intestines. The affection of the liver is, perhaps, mostly congestive, but occasionally attended by an obscure indication of inflammation, as pressure reveals, the bile in both cases being defective or depraved. Generally, too, there is torpor of the colon, but now and then even irritation on its mucous lining; and the skin is commonly out of order. These affections are sometimes separate, at other times co-existent, as I have before stated; but they invariably precede or attend the external inflammation called gout, which is an effect of the internal affection, and which may be acute, sub-acute, or chronic. Where it assumes an acute or sub-acute character, it is sufficient to disturb the whole nervous system, and that disturbance again affects the vascular system, so that the animal heat on the surface and the heart's action become increased, or that state usually termed fever is established; but when the inflammation is chronic it seldom excites fever. This affection arises from sympathy. I merely use the word sympathy to express the fact of the connexion which exists between one part of the body and another, and the knowledge of the fact is of great pathological importance. The inflammation which is seated in the external part, namely, about the great toe or other joints, may be sufficient to disturb the whole nervous and vascular systems, by the continuance of which an internal part may become inflamed. The internal organs sometimes become inflamed in the progress of external inflammations, and this is the case in gout, the structures most predisposed there being thus, in certain instances attacked by inflammation, which primarily arise on some portion of the mucous membrane of the alimentary tube in particular. When the internal inflammation is acute or sub-acute, the tongue becomes furred, the pulse quick, the skin hot, the stools unnatural, the urine cloudy, and the temper fretful. If,

on such occasions, you were to assume that the affection was simply external, you would be led into a very serious error, and indeed in all cases you must direct your attention to the state of the internal organs, in order to ascertain whether or not they are affected.

The external inflammation generally arises about the great toe on the first attack, but sometimes in the hand; for instance, I have known one of the fingers the seat of the first accession of gout. The pain is most severe at night, if there be an increase of the fever, and if the inflammation be acute or sub-acute; but frequently the pain and fever abate towards morning. This increase and abatement of the fever and pain usually make a paroxysm, or fit, of acute or sub-acute gout, which is various in its duration; shorter in the young and strong, than in the weak and old, seldom continuing, at its first attack, more than a few days. The external inflammation may be acute, sub-acute, or chronic, and it is only in the acute or sub-acute form that fever is an attendant, unless some internal organ be affected in the chronic form. The internal organs, recollect, may become implicated in the inflammation, and the mucous membranes are generally the seat of that inflammation, whatever degree or extent it may assume. Now the value of general principles in pathology is exceedingly great, indeed a man without these general principles is like a mariner without a chart and a compass, he has nothing in short to guide him on his perilous way; but if he possesses general principles he can never be deceived by abstract names, such as gout, nor by the conjectural absurdities which they involve. If a man be told that a patient has the gout, he will pay no attention to the mere name, he will regard it as a vain and empty sound, but he will investigate the affection most narrowly in reference to the conditions with which it may be connected; in a word, he will examine every organ physiologically and pathologically, and ascertain whether the affection so named be connected with any external or internal inflammation, and will act accordingly.

When gout has once occurred, subsequent attacks generally occur, which, however, are almost always connected with the habits of the patient. The second does not, generally, soon take

place after the first attack; on the contrary, the interval between the first and second attack is considerable, sometimes one, or two, or even more years; the future attacks occur more often, because the predisposition in the internal and external parts of the body becomes stronger and stronger from the repetition of the disordered conditions; and then, indeed, other parts of the external body than the feet become attacked, as the wrists, the knees, the elbows and ancles. If you examine the seat of the external inflammation anatomically, you will find that the cutis, or skin, the cellular membrane, the serous membrane, and the fibrous membrane, are all implicated where the patient has had repeated attacks of what is called gout. When attacks of gout have been more frequent, they are not only longer in their duration, but they leave the parts stiff and swollen from the effusion, and consequent thickening, which has taken place during the continuance of the renewed inflammations. As one of the results of this continued or renewed action, chalk stones may be mentioned, but there are varieties of them in different persons. SYDENHAM has aptly compared them to crabs' eyes. Chalk stones are deposited, first as a sort of jelly, as I have had some opportunities of observing in parts exposed; and, apparently, the thinner portions being absorbed, an earthy concretion is at last formed, often composed chiefly of murate of soda, but in other instances varying in its composition, as some French chemists have satisfactorily proved, a fact applicable to other inflammatory depositions of other structures.

The disease which I have just described, is what medical writers have termed the *regular gout;* that is, where there is external inflammation connected with obscure internal disorder, the last of which they have never defined. But if an internal affection palpably arise, then it has been termed *irregular*, and because the writers on this subject had no distinct pathological principles, all sorts of absurd conjectures have been framed to conceal their ignorance. These irregularities have been ascribed to some mysterious agency, which has been termed the gout--an abstract or etherial essence, wandering over and attacking by turns all parts of the body, like an invisible and evil genius. These internal

affections, I repeat, have all been deemed strange and anomalous, and gout is the cause of them ; but, in the name of common sense, what is gout ? Let us discard and despise the technical jargon and subtilties of learned ignorance, and appeal to common sense to decide, whether these anomalous symptoms which have been ascribed to gout be not referrible to the known principles of pathology, and consequently reducible to known and acknowledged rules of practice ? They are, I confidently assert, truly referrible to some particular condition or conditions of the external or internal parts of the body, and in the present day it is monstrous and absurd to say that they depend upon that nonentity—that imaginary thing called gout, neither perceptible nor tangible. Now what is the condition of the external parts ?—inflammation, unquestionably. And what are the conditions—the pathological conditions, of those affections which sometimes arise in the course of abstractedly and metaphysically called gout ? Certainly one remarkable circumstance occasionally attends gout, and that is, an apparent transfer of inflammation from one part to another, but there is nothing peculiar in this ; it is, I say, common to other affections ; for example, one individual labours under erysipelas of the face, another has rheumatism in his joints, and a third has gouty inflammation, say in his great toe. In the individual affected by erysipelas, the inflammation occasioually leaves that part suddenly, and the brain becomes the seat of inflammation. The person who had rheumatic inflammation of the joints, in like manner, becomes attacked by inflammation of the pericardium, while that of the joints has just before receded. The third, who had inflammation in the great toe, is seized in a similar manner by inflammation in his stomach or bowels. These translated inflammations, as they are called, are then not peculiar to gout, indeed they occur much oftener in rheumatism, and not unfrequently too in other affections, particularly where the stomach is disordered. I knew a gentleman who could transfer the inflammation of gout from the right wrist to the great toe, by increasing the temperature of the toe and diminishing that of the wrist at one and the same time. These transfers of inflammation are always connected with irregularities in the distribution of the animal heat.

Inflammation generally arises in one of three ways when attended by fever: first, indirectly through the influence of depressents; secondly, through direct stimulation; and thirdly, through local irritation. In the acute or sub-acute inflammation, called gout, we have fever existing; there is a hot skin, a quick pulse, and a furred tongue, and is it surprising if, in the progress of that fever, the mucous membrane of the stomach or bowels, or any other part, should sometimes become inflamed, and in individuals, too, who have weak or predisposed parts, from their luxurious habits.

The internal inflammation which occurs, sometimes, in the progress of gout, generally does arise from the common principle of the increase of the heart's action, operating on the weak organs. Trace the history of those cases which have terminated fatally where excitement had been developed, and you will find the vestiges of inflammation distinctly evident. Lieutaud, Morgagni, De Haen, and Portal, have recorded, that in the cases of irregular gout, which they examined after death, traces of inflammation existed internally; and it is strange that such men, with the evidence of symptoms and dissections before them, did not discover the deception of scholastic or collegiate authorities; but the fact shows, that the most powerful minds may be bound in the bands of prejudice through life. Because, forsooth, an individual happens to have an inflammation in his great toe, accompanied by fever, and dying in the progress of that fever, with indication of disturbance from some internal disorder, he is said to die of gout in the head, in the bowels, or in the stomach. But why not rather at once confess an utter ignorance of the cause of death than thus use the word gout to gull the public. Surely where information fails, the confession of ignorance ought to commence. The cause of death in such cases is clear to those who understand the principles, the simple and precise principles of modern pathology. What is so ignorantly called gout in the stomach is often inflammation of its mucous lining. But it is not always an inflammatory affection; for example, a man loads his stomach with a large meal of crude, indigestible food; he has an attack of gout perchance, and complains of pain

in the stomach ; a nosological practitioner is sent for, and he says that it is the gout in the stomach, and under this conviction treats this and the fore-mentioned inflammation exactly in the same way ; yet such an affection, in the first instance, is rather spasmodic, the effect of crudity and flatulence, equally apt to occur in individuals, from the same cause, who do not labour under gout at all ; and when it does occur with gout, it is an accidental circumstance or coincidence, dependent not on a peculiar, but on a common cause, namely, crude and undigested materials irritating and distending the stomach. Many similar attacks arise from large or complicated meals of animal and vegetable food, which, in such cases, often remain in the stomach unchanged for many hours.

Again, it is said that gout is often found in the bowels. Now, with regard to the bowels, you will often find gouty individuals labouring under spasms and pain, and if you take the trouble to examine the case, you will find either that inflammation has arisen there in the ordinary manner, or that the pain is not inflammatory but spasmodic, dependent either on offending ingesta or on an overloaded state of the colon, an affection likewise not uncommon in those who never had the gout.

Where do they place gout next? Oh ! they say it is sometimes an affection of the head. But is it not common for men to have affections in the head who disorder their stomach, liver, and bowels by good living, but who never had an attack of gout? Because, however a man has such an attack, if apoplexy, or any other cerebral complaint takes place, it is forthwith set down to the account of gout, when it admitted of an indisputable explanation on common principles, when, in fact, its occurrence in a gouty case was not necessary, but purely accidental, from the coexistent circumstances. We have yet other absurdities on the subject. If a man have palpitation of the heart, and if that cease after a fit of the gout, when the stomach has been restored to good order, the palpitation of the heart was suppressed gout. But does not palpitation arise very often from disordered stomach in persons who have no gout, and is it not removed with its original cause? If an individual be pale and depressed, and if a

fit of the gout occur so as to create excitement, and remove the paleness and depression, the languor and the lassitude, these also had arisen, according to sapient speculators, from the gout, and the gout alone. But are not paleness and depression, are not languor and lassitude often removed on the occurrence of any local irritation sufficient to create excitement? And is not this a general law of the animal economy? Does not the stage of depression give way to that of excitement as we see daily exemplified in cases arising from various remote causes?

Again, if we look to the state of the urine we shall see that there is nothing peculiar in that passed in gout. For as far as the sensible qualities of the urine are concerned, I have seen the same sort passed repeatedly by persons who have had their stomach, liver, and bowels disordered. And, truly, in regard to the composition of gout-stones, they have been supposed to be uniformly the same, but VAUQUELIN and others have shown the contrary to that assertion by actual analysis. These depositions, too, have been supposed to be always peculiar to gout, but I have known cases in which such productions were found without the patient's having had any symptoms of gout whatever; and Dr. SUTTON has reported a similar example. When different structures are attacked by inflammation, we have different products as the ultimate result. Some little change may be induced, either in the duration or in the degree of the inflammation, which may be the cause of these varied formations. Certainly, in our profound ignorance of the chemistry of the body, the formation of stones in gout is no more surprising than the formation of stone in the kidneys or bladder, nor the earthy depositions which occur on the tunics of arteries.

From all that I have said, then, it would appear that there is nothing peculiar in gout, except that some of the older pathologists have chosen to say so, and that most of the modern ones, surrendering their judgments, have subscribed to an opinion, which is utterly foundationless when we appeal to facts through the medium of common sense. Nay, so truly in the dark are most of these pathologists, that they are wholly unaware of the various conditions of the mucous membrane, with which attacks

of gout are inseparably connected; and taking up a merely conjectural philosophy, they adopt an empirical and uniform practice, as far beneath the present state of medical science as it is detrimental to the public health. Make yourselves fully acquainted with the principles of modern pathology, and you will at once, be freed from the authority of names, and those numerous and pernicious conjectures with which they are connected.

LECTURE XXII.

ON RHEUMATISM AND THE DIAGNOSIS OF GOUT AND RHEUMATISM.

In this lecture I shall make some observations on *Rheumatism*, and also on the *distinctions* which exist between that affection and *Gout*.

Rheumatism, like gout, derives its name from the supposition that the fluids were principally affected. The tendency to rheumatism, like that of gout, exists more strongly in some families than in others; and I have seen several examples in which persons having a tendency to rheumatism were very liable to chronic affections of the heart and attacks of inflammation of the pericardium. The tendency to rheumatism, however, is far more frequently *acquired* than hereditary, being generally connected with great or sudden alterations in the surrounding temperature. Indeed the most common exciting cause of rheumatism is cold, or a low or variable temperature of the atmosphere. Rheumatism, therefore, prevails more in the spring and winter; but it not unfrequently occurs in wet autumns, and even in summer when the mornings and evenings are cold, and the middle of the day hot. People are often attacked by rheumatism after having been drenched in the rain, and especially if they sit down and rest in their wet clothes; or after sleeping in damp beds, or wearing damp linen; or from being exposed to currents of cold air; and sometimes it arises from leaving off some part of the dress, such as a flannel waistcoat, or the like.

Rheumatism, when once induced, has three forms. As far as

the inflammation is concerned, it is either acute, sub-acute, or chronic. The acute and sub-acute merely differ in degree, in as much as in the acute the local inflammation is more severe and the fever is higher. The chronic form of rheumatism is principally distinguished by the absence of fever. When a patient is attacked by the acute or sub-acute form, he has a very hot skin, a rapid round pulse, generally ranging from 110 to 120, or 130; there is an aching numb pain in the affected part, which amounts to very acute pain on any motion of that part. There is very little redness or swelling at first about the site of the pain, and the patient is liable to abatements and increases of the fever; the former commonly occurring towards morning, the latter towards evening; and where the pain is urgent the skin is often moist. The urine is generally scanty, high-coloured, and turbid. The larger joints are more frequently the seats of rheumatism than the small ones; the pain frequently wanders from one part to another, or shoots in the course of the muscles; and we have instances of spasm attacking the bowels, and more particularly the intercostal muscles, which should always be narrowly noticed, since they are sometimes the precursors of inflammation within the abdomen or chest.

The duration of acute and sub-acute rheumatism is various, but there is one observation applicable to this affection, namely, if it be not checked at the onset by prompt and proper measures, it most frequently has a sort of determinate duration, continuing from two to three, or even four weeks, especially if the weather be cold or changeable. It is, therefore, of great importance to arrest rheumatism at the beginning. You must not confine your attention to the external pathology, but always regard the internal pathology. The external inflammation maintains the fever—maintains the increase of the heart's action and the increase of the animal heat, so that if any internal part of the body be disposed to inflammation, it takes place there, from the excitement operating, through the blood, upon the capillary vessels of particular organs. Hence the disorder may be either simple or complicated; simple, not in reference to common simple fever, but because the fever may be only accompanied by the external inflammation; it

may be complicated in as much as it may be accompanied by an internal inflammation, and that internal inflammation, usually arises from the general law of excitement operating on weak organs.

Whenever you attend a patient labouring under rheumatism, be exceedingly cautious in regulating the temperature of his apartment, because if he has a chill he may be attacked by inflammation in some internal organ. The thermometer should be kept hung up in the apartment, the temperature of which may range between 58 and 62 degrees. The consequence of acute and sub-acute rheumatism is sometimes

CHRONIC RHEUMATISM.

The fever abates, and perhaps at last leaves the patient, yet the joints remain chronically affected. I attended a case of that kind in which, with a numbness in the left elbow and swelling of the bursæ there was the sequelæ of acute rheumatism. Sometimes the inflammation puts on a different character, passes on, in fact, to the disorganization of the joint very insidiously, under the form of what is called white swelling; if the patient's strength be broken up by a previously acute disorder, and if any parts of the body, especially the joints, become the seats of chronic inflammation, that inflammation sometimes puts on the strumous character. Where the strength is broken up, be sure to keep the liver, stomach, and bowels in good order during convalescence, and guard the patient against cold. Chronic rheumatism arises sometimes entirely independent of any acute or sub-acute form; from exposure, for instance, to extremes of temperature. The pain of chronic rheumatism is sometimes increased by the warmth of the bed, and I have known some individuals who could not wear flannel; but it is generally lessened by the warmth of the bed, provided the clothing be not excessive. The joints in which it is seated are stiff, and feel cold and painful, the pain being increased by motion, and by every remarkable change of weather.

Chronic rheumatism, when it attacks the parts about the hip, in the course of the sciatic nerve, has been called *sciatica*; when

the parts about the loins, especially the lumber fascia, or muscles, are its seat, it is called *lumbago;* but it often attacks the hands, the feet, the shoulders, the elbows, or the knees, especially the bursæ about these joints.

DIAGNOSIS.

There is one affection which you may easily confound with rheumatism, and that is, what has been denominated *gout*. The ancients did confound gout with rheumatism; but, as far as the characters of the mere external inflammation are concerned, they are very different, to say nothing now of the internal pathology. The following are the *main diagnostic symptoms* between *gout and rheumatism*:—1. Gout scarcely ever occurs before the age of puberty; I have only known two examples to the contrary. 2. Disorder of the mucous membrane of the alimentary canal always precedes and attends the gout, whereas in rheumatism that is not generally the case. 3. In the next place, whether the disorder be primary or secondary, cases of gout never exist without it, gout standing to that disorder in the relation of an effect, being, in a word, nothing more than a part of that extensive series of inflammations which arise in different structures sympathetically, from a disordered condition of the mucous structure before named; but rheumatism may almost always be traced to cold as its exciting cause. 4. Gout is generally seated on the first attack, in the great toe; but I mentioned a case in which it happened in the finger of a young barrister; whereas in rheumatism the inflammation settles in some other joint than the great toe. 5. The inflammation which occurs in gout is of a vivid, shining, smooth red, the parts swell rapidly, and are remarkably tender, the pain being sharp and burning; on the contrary, the part is more slightly red and far less swollen in rheumatism than in gout, and the pain, when the part is at rest, is comparatively of a numb aching kind. This difference between the pain of gout and that of rheumatism is so distinct, that individuals who have had both can distinguish the one from the other. 6. In the next place, there are more distinct remissions during the progress of gout than rheumatism; besides, the form

is more highly developed in acute or sub-acute rheumatism than it is in gout. With respect to the chronic gout, it may be generally distinguished, first by the greater degree of swelling in the affected part, and secondly by the simultaneous disorder of some portion of the alimentary canal.

The gout, too, appears to attack more structures at once than rheumatism; the serous, the fibrous, the cellular, and cutaneous membranes, I repeat, about one and the same time; which is not the case usually in rheumatism, although it may be a next door neighbour. The seat of rheumatism is obviously various. Sometimes it is in the muscles, sometimes in the fasciæ, sometimes in the synovial membrane, sometimes in the sheaths of nerves, and sometimes, perhaps, in the fibrous substance of the nerves themselves. There are some inflammations of a rheumatic kind which may be confounded with other affections, and I shall now, therefore, speak of the diagnosis of these. A rheumatic affection of the *nerves* follows the course of the nerves, the pain is numb and of an aching kind, generally constant, but occasionally exasperated by paroxysms; this invariably increases by pressure. If in the sciatic nerve, it may be distinguished from inflammation of the hip-joint by the pain and enlargement which attends the latter affection, and as the hip-joint is the centre of motion between the trunk and the lower extremities, so the movement of either increases the pain in the joint; the pain is also increased by making pressure in the region of the joint, and on the sole of the foot upwards. These characteristics will guide you in the earlier stages, especially if you attend to the position in which patients lie in hip affections, the trunk being always more or less turned to one side, so as to relieve the hip as much as possible. You might confound lumbago with psoas abscess, but the pain of the back in the latter is very insidious, it is what poor persons call a weak pain, especially in walking or standing. Uneasiness is often caused in psoas abscess when the foot is turned outwards or when pressure is made upon the lumbar vertebræ. But there is one remarkable circumstance attending psoas abscess, which is, that the patient does not fully extend the thigh without at the same time bending the trunk. A tumour also forms in the groin

in the progress of the disease, which dilates on coughing. You might confound lumbago with the inflammation of the kidney, or of the root of the liver; but if you attend to the diagnostics which I laid down, you will never be mistaken in your opinion. You must not fail either to remember what I formerly said with respect to an overloaded condition of the colon, which I have known to be treated as a rheumatic affection of the loins. Do not forget, that in lumbago the attempt to get up or sit down is always attended by a great increase of pain.

Again, you might confound rheumatic pains with those of syphilis. You are aware that syphilis assumes three characters: the primary, the symptoms of which are chancre and bubo; the secondary, in which the throat and soft parts of the surface are affected, with disturbance of the general health; the ternary, in which the disease attacks the hard parts of the body, or the bones, or rather first their periosteal covering. It is the last form of syphilis only which could be confounded with rheumatism, but by tracing the history of the case backwards, you will find that the patient had a chancre and inflammation, and ulceration in his throat, with blotches on the skin, and finally inflammation of the periosteum, producing a node where the pain is seated; moreover, the general health, as before observed, is much disturbed, the skin being of a dirty sallow hue, and the mucous membrane of the prima viæ is invariably in such cases less or more concerned.

I have mentioned three forms of rheumatism,—1. The acute; 2. The sub-acute; 3. The chronic. The acute form is distinguished by the great local pain, and by the highly developed fever. The sub-acute form is distinguished by the less degree of pain, and by the less degree of fever. During the progress of the acute and sub-acute forms of rheumatism, the internal parts may become inflamed. 1. From the law of increased excitement operating upon weak organs; and 2. From metastasis, or a translation of the inflammation from the external to the internal parts, particularly to the fibrous and muscular structures. Chronic rheumatism sometimes supervenes as the consequence of the acute or sub-acute form, and at other times it arises as a

primary affection, independent of fever, especially in such individuals as are exposed to currents of cold air.

There is another subject, apparently connected with this, which requires more minute examination; it is what is commonly called *rheumatic gout* and *rheumatic palsy*. What is called rheumatic gout is very often connected with some affection of the stomach, liver, and bowels, either of one or of all these parts. What is called rheumatic palsy is connected with some disease of the brain or of the spinal cord. Whenever you find a patient labouring under an apparently chronic rheumatism, you should make a point of examining every organ physiologically and pathologically. Examine into the state, not only of the stomach, liver, and bowels, but of the brain and spinal cord, and trace the disorder from its origin to its present condition. If you suspect the brain or spinal cord to be disordered, trace the history of the case most minutely; consider what the physiology of the brain is, and contrast the healthy functions with the existing symptoms. Do the same with the spinal cord, and you will soon ascertain if it be the seat of disorder. Many serious affections of the brain and spinal cord are announced by pains in the upper or lower extremities: if these pains be timely attended to, and if their cause be properly understood, they are generally soon removed by evacuations; but if these pains be overlooked, or if their cause be not clearly comprehended, apoplexy, or palsy, is the most common result. Do, therefore, be most assiduous in investigating the cause of all such affections.

LECTURE XXIII.

TREATMENT OF GOUT AND RHEUMATISM.

The treatment of gout may be divided into two parts, that which is best adapted to relieve the fit, and that which is best adapted to prevent a return of the fit. I must premise, however, that gout does not require always the same treatment; you

must not, in fact, prescribe for mere symptoms, but for particular conditions in each case; and you will recollect, that as the affection called gout is different in its internal pathology in different individuals, so it requires a correspondent variety of treatment. The value of all general principles is, that we can make them bear upon particular cases; so that a man who possesses such principles will connect effects with their true causes, and prescribe accordingly.

If we must allude in some degree to the arbitrary and erroneous arrangement which prevails on this subject, gout is *regular* and *irregular*. What is called the regular gout, occurs with evidence of disorder in some portion of the mucous membrane of the primæ viæ, and the external sympathetic inflammation is generally in the great toe.

That inflammation is acute in some cases and sub-acute in others, and then it is accompanied by fever porportioned to the degree of the external inflammation and internal irritation. In other cases, the inflammation assumes a chronic character, and the patient has no fever at all. Now if you find this affection occurring under the regular character, supposing it to be an acute or sub-acute form of external inflammation, in a young or middle aged subject, the following plan will answer, in many cases, the best purpose:—

1. Absolute rest in the recumbent posture, continued as long as there may be any sign of external inflammation and fever. Whilst the inflammation and fever continue, rest in the recumbent posture is a most powerful auxiliary.

2. The use of aperient medicines. Give about a grain, or a grain and a half, of calomel, with four or six grains of rhubarb at night, and a draught, if necessary, on the following morning, tepid, and composed of about an ounce of infusion of senna, with one drachm of the sulphate of magnesia, and a few grains of calcined magnesia; but if the tongue be at all red at the tip, a little cold-drawn castor-oil will generally be a more suitable laxative after the calomel.

3. Exhibit every night about a drachm of the wine of the col-

chicum seeds, but be sure to withdraw it altogether as soon as sickness shall supervene. Sometimes it is necessary to prescribe this dose twice a day.

4. Order a bland diet whilst any degree of fever shall continue. These are the means which will most frequently suffice to remove what is called regular gout, when it is of an acute or sub-acute form, without internal inflammation.

But it happens in some of these cases, which in common language are denominated the *irregular gout*, that you have symptoms of actual inflammation in some internal structure, particularly in the mucous membrane of the stomach, or of the small bowels, which may be relieved by local blood-letting, by the application of leeches over the integuments of the affected parts, so long as the pain remain, with a red tipped tongue, a quick pulse, and a feverish heat of the surface. Indeed I have often thus applied leeches in gout advantageously, when symptoms of subacute inflammation of the internal mucous membranes existed, and in more urgent cases have bled the patient, or rather ordered blood-letting from the arm, with much benefit. But always consider the age and the habits of individuals. If the patient be young, or middle aged and robust, unbroken in his constitution, you may bleed with great propriety and advantage, either from the arm or by leeches, as the inflammation may require. If there be no signs of internal inflammation, bleeding will of course be unnecessary. Again, if the individual have had many attacks of gout, and have been a free liver, local blood-letting will generally suffice, where internal mucous inflammation shall arise. In regard to external applications, you will find that none are necessary, if you treat the patient properly and remove the concomitant disorder of the stomach, bowels, or liver, whether that disorder be local simple excitement, or a degree of inflammation of the mucous surface. The great discoverer of the circulation of the blood, HARVEY, seems to have put his foot into cold water when attacked by the gout, and I knew a physician who did the same, not only with immediate relief, but without any remote mischief from the practice.

There are cases on record where this practice has been pro-

ductive of bad effects. PORTAL mentions an instance in which a patient was attacked by a fatal inflammation of the lungs. If an individual in health plunged his foot into cold water, and if a chill of the whole surface followed, excitement would eventually take place, and the blood would be circulated with greater velocity than natural, but all the internal organs being in a sound state, none would become inflamed; yet, on the contrary, if an individual having a weak organ were exposed to the same degree of cold, that organ would become inflamed during the continuance of the excitement, on the principle already and repeatedly explained. But inflammation, from the mere sudden change of temperature, might arise in some remote part through metastasis.

Upon the whole, then, it requires great care in adopting that plan of treatment, first, because inflammation may occur internally from excitement, and, secondly, from translation, connected with a deficiency of heat in one place, and an excess in another. The best local application is warm water and a little alcohol applied to the part, a mode of tepid ablution which produces great relief; take care, however, not to expose the leg naked at the same time. I have known inflammations of the mucous membranes of the air passages, and of the mucous membrane of the intestines, occur from exposure of the legs when the feet have been put into warm water, especially in a cold chamber. Indeed I am in the habit of telling delicate males to cut off the foot of a stocking and draw it over the leg, or of females, to cover the legs above with a flannel petticoat, whenever a lotion is applied to the feet in such cases.

I have seen a work which was published by Dr. Steidman, at Wells, in 1779, entitled, "A successful method of Treatment for the Gout," and in the beginning of it he has adopted for a motto, "*Dolor est Medicina Doloris.*" He has recommended that a blister should be applied near the gouty toe, and he asserts that when the blister rises, the pain of the gout subsides. He says, "That nature seems operating to restore and establish the health generally by creating a particular sore." In short, this speculative Doctor would have one believe that the gout in the toe is an attempt of nature to make a sore, but that she has not sufficient

power to establish it perfectly; as if the gout were like lightning, going in flashes to the foot and other parts of the body, and that the blister was the conductor to guide and fix it on the extremity. An eminent surgeon in London, I understand, is in the habit of blistering in gout, a practice which deserves attention in chronic cases. The poetical doctor, of whom I have just spoken, says that there are two kinds of clothing for the gout, an external and an internal one, internal stimulants, and external irritants, the latter of which, in protracted thickening and stiffness, have perhaps been too much neglected in modern times.

The second form of gout is that which has been called irregular gout, which is most frequently connected with internal inflammation, or spasm. If, in such instances, you direct your attention to the internal organs, you will discover that the parts most liable to inflammation are the mucous membranes of the stomach, or of the small intestines; the inflammation being generally of a sub-acute kind, and therefore requiring minute investigation to ascertain its origin and progress, particularly when seated in a portion of the ilium. There is nothing peculiar in the treatment of this form of inflammation, for it will yield to local bleeding by leeches, and a combination of the other simple means which I formerly pointed out as the appropriate remedies, which will be alike successful here. I knew a physician who practiced with very great success for fifty years, and his principle was, that the irregular gout was, generally, nothing more than an internal inflammation. Sometimes, however, spasms will be found to exist in gouty habits, from remote causes if the stomach be overloaded with crudities, or distended with flatus, or irritated by acids, nothing relieves so soon as a glass of pure brandy. You may have violent colic produced from the same causes, and if you were to give a little brandy with opium, the symptoms in most instances would speedily be removed. Sometimes there are distinct evidences of congestion, the head being heavy, the secretion of the liver defective, the stomach distended, the skin pale, while the patient complains of lassitude and langour. In these conditions, you will find local bleeding, and small doses of calomel, followed by rhubarb, or castor oil, have a good effect, but

warm sinapisms should be applied a short time to the feet. The fact is, these supposed irregularities are not peculiar to gout, because they happen in individuals who never had the gout, but they are almost always associated with some disorder in the primæ viæ, more especially seated in its mucous tissue.

In the *chronic* form of *gout*, the chief remedy is the *regulation* of the patient's *diet* and *drinks*. If there be no fever, a light animal diet may be allowed, with a little bread, for dinner; the morning and evening meal consisting of a cup of black tea and bread, with very little milk or cream, and still less sugar. But if there should be any fever present, you must have recourse to a bland diet, one which will neither irritate the mucous membrane of the stomach or bowels, nor excite the heart's action. The next mean for the removal of chronic gout, is the *use of aperients;* and those which I have found to succeed better than any other, is a combination of rhubarb, and an alkali, with a little colchicum. The vapour bath, too, is a very good auxiliary, often tending to shorten the attack of chronic gout very remarkably. I knew one gentleman who had tried almost every thing, and found nothing shorten the attack so much as the use of the vapour bath.

As to the *prevention of gout*, I believe that a return of this affection is by no means *necessary*. Many persons have an idea, that because they have had one attack of gout, they must necessarily have another, but if any man would early regulate his habits, physically, morally, and intellectually, I firmly believe, that in nineteen cases out of twenty, the gout would never return. The regulation of the patient's habits is by far the most important measure in the prevention of gout, and a return of which, I repeat, is not necessary. The way to manage such individuals, is more easily said than done, on account of the difficulty of the exercise of self-forbearance.

1. *Diet*. Regulate the kind, and also the quantity of food. The food ought to be simple in kind, and moderate in the quantity; indeed more persons err with respect to the quantity than the kind of food. One thing ought to be observed, namely, that those individuals who dine out very often never can be cured of the gout; for you can never put the stomach, liver, and bowels

into perfectly good order. Such an epicure tries to reason the case with you thus: why may not I eat a mutton chop or the wing of a chicken in company as well as alone? But the fact is, that he eats of three or four different kinds of dishes, and drinks of three or four kinds of wine; the present temptation of enjoyment overcoming all consideration of the future pain and penalty. The mastication should be slow, and an interval of four or five hours should exist between each meal, that one may be digested before another be taken.

2. *Drink* should be attended to as particularly; all fermented and acid drinks should be avoided, and the quantity of drink too should be very moderate. If a person take a large quantity of slop, say three or four large cups of tea, in the morning, and the same in the evening, besides a considerable portion of fluid at dinner, the stomach must become very much distended and disturbed indeed, in many cases. Moderate, then, the quantity of fluids. It is of great consequence also that the water which the patient drinks should be pure, and even that in which his vegetable and animal food is dressed. I have seen the health of many persons very much improved by attending to the water which they drank, and that which was used in cooking. The bread should be home-made.

3. A third point to attend to is the exercise; a certain portion of which, in the open air, is necessary, in order to secure a healthy digestion.

4. The sleep is another circumstance worthy of consideration. If a man sits up late, first the nervous system becomes irritable, and secondly, the stomach, liver, and bowels perform their functions irregularly, and in that way, very often, gout is induced.

5. The management of the mind is highly important. All, perhaps, that a medical man can do here is, to tell the patient that he must avoid all those occasions which, from experience, he knows to disturb his mind. This cannot always be done to the desired extent, but the business of true philosophy is to communicate serenity of mind.

6. The sixth circumstance to be attended to is, the air, which,

if possible, should be refreshed in his apartments by ventilation, and that never can be done effectually but through the aid of an occasional fire. A temporary residence, now and then, in the country, is of great benefit to all cockneys affected by the gout.

7. A seventh thing is to regard the correction of acidity, as it often proves a source of great uneasiness to the patient, and prevents the due performance of the digestive functions Medically, nothing answers better for this purpose, than to give gr. v. of rhubarb, and gr. x. or xv. of the carbonate of potash, in a little aromatic water, before or after dinner, by which acidity is prevented, provided no errors be committed in diets and drinks; if there be a torpid state of the colon, give a pill daily, containing two parts of aloes and one of mastich, made in a pill with tincture of gentian and a drop of the oil of cloves.

8. The clothing is a material point too, in the prevention, for gout is often induced by the change which takes place in the surrounding temperature, which, through the skin disturbs the stomach, liver, and bowels, and brings on an attack of gout. Moderately warm clothing, therefore, is necessary.

9. Bathing is a very powerful mean in the prevention of gout, especially bathing in tepid salt water, gradually reduced to a temperature of about 60°, provided the patient feel warm and comfortable after its use. It renders the person far less susceptible of changes of the atmospherical temperature. By a combination of these means, many individuals whom I know have entirely escaped a return of the gout. Let the stomach be kept in good order by simple and wholesome diet, and gout will be certainly avoided, an affection which is immediately productive of much suffering, and which remotely, not only cripples patients, but shortens their lives.

TREATMENT OF RHEUMATISM.

Rheumatism was before divided into three forms, the acute, sub-acute, and chronic. In the acute form, if the individual be young and robust, you may draw blood with great benefit in the beginning, according to the degree of inflammation and fever. Bleed the patient decisively, and you at once make an impression

on the disorder. If the inflammation should be sub-acute, and the fever not high, local bleeding will only be necessary. 2. The exhibition of aperients is necessary, and for the first day or two, nothing is so good for this purpose as calomel, rhubarb, and the sulphate of magnesia, with senna. 3. Regulate the temperature of the apartment, because if the temperature be not properly attended to, patients may be liable to attacks of inflammation of the pericardium. The best temperature in which to keep the chamber is from 60° to 62°. When a patient is much weakened, you should be most careful about the temperature, especially when he has occasion to get out of bed to the night stool; it is much better in such cases to use a bed-pan, particularly where the skin is moist, and the weather cold. Bleeding, then, locally or generally, and the use of aperients, are the two first measures to be employed, and the third is the use of *colchicum*. This may be given at night in moderate doses, the same precautions being attended to which I before mentioned; in a word, you must leave it off as soon as any sickness is produced. 4. The fourth means is a blister, which seems to remove the inflammation hanging about the joints under a more chronic form.

When you have succeeded in removing the violence of an attack of rheumatism by bleeding, aperients, and colchicum, you must treat it more cautiously afterwards; you must not be guided wholly by the appearance of the blood, which will be buffed to the last in rheumatism; but you must then adopt mild measures day after day, and attend to the diet, temperature, bowels, and sleep. This simple plan, with the assistance of laxatives and a little colchicum, will almost invariably succeed. But do not continue the colchicum long, otherwise it will do harm by disturbing the stomach and breaking up the general strength.

CHRONIC RHEUMATISM.

The main thing in chronic rheumatism is to regulate the diet, in the way which I have mentioned with respect to gout, namely, it should be simple in kind and moderate in quantity. A patient affected by chronic rheumatism should keep his bowels regularly but mildly open; and if he cannot do this by diet, and the

attempt to obtain an evacuation at a certain hour, the compound rhubarb pill of the Edinburgh Pharmacopœia, or the compound aloetic pill of the London Pharmacopœia, will be found proper aperients.

3. A third point is exercise; the patient should take exercise in the open air, for it tends not only to establish the health, but to remove the pain and stiffness about the joints, when carried so far as to produce a gentle and a general perspiration. Where exercise fails to produce this effect, the vapour-bath will be found an excellent remedy, followed by friction and motion of the affected joints. Blisters are sometimes useful. Acu-puncturation has done much good in many cases, and the French have recently made an improvement in that process, by allowing the minute needles to remain in the part for some time, and certainly experience has proved the superiority of this practice.

There is a remedy which is very popular in some parts of the north of England for the sciatica, which is a caustic issue placed beneath the head of the fibula, between that bone and the ridge of the tibia; if an issue be made there it will generally succeed in removing the sciatica as far as I have observed. Though now a popular remedy, you will find that it is recommended very strongly by COTUNNIAS, and I can assert its utility in several obstinate cases.

Other means are very useful in chronic rheumatism, as the warm salt water bath; if an individual be near the sea in the summer, and use the warm salt water bath three times in the week, and continue it for two or three weeks, at the same time attending to the regulation of his diet and sleep, he may often succeed in getting rid of the complaint. Sulphurous waters used externally and internally have sometimes a very good effect, as the Harrowgate waters. If these means have been fairly tried there will be seldom any necessity to recommend a change of climate; but if they should fail, then send the patient, if practicable, into a milder atmosphere, which will be very useful. Patients and medical men, however, are apt to look for advantage to things at a distance, and to neglect the removal of those circumstances which prevent or retard the recovery at home; therefore, try

every means at home first, and be sure not to rely on a merely medical treatment, but attend most strictly to the diet, the proper management of which will alone sometimes remove chronic rheumatism, aided by the cautious use of the colchicum and the vapour bath.

LECTURE XXIV.

DISEASES OF THE EYE—ON THE SYMPTOMS AND EFFECTS OF OPHTHALMIA, OR INFLAMMATION OF THE EYE.

THE various phenomena of nature appear, at first sight, exceedingly complicated; but if on any one subject a man collect particulars, and arrange them by reflection, he will discover that they are all referrible to some ultimate fact, which we call a general law or principle. Thus, for example, if any one were to contemplate the various phenomena of affections of the eye, he might be puzzled until he could refer them to some such law, when he would be satisfied that most of them depended on one condition, namely, inflammation, or at least that inflammation of this or that structure was connected either as a cause or a consequence in a large majority of the disorders and diseases of this organ. Inflammation of the eye, like that of other parts, is modified by the remote occasion, by the tissue attacked, by the state of the system at the time of the seizure, or by the nature of the atmosphere which the patient breathes.

INFLAMMATION OF THE EDGES OF THE LIDS, OR OPHTHALMIA TARSI.

This is denoted, 1. By a viscid secretion from the tarsal glands, the eyelids being more or less glued together in the morning. The secretion becomes changed in its quality, it is bland and unirritating in the healthy state, it becomes acrid and irritating in the unhealthy condition. Locally considered, the tarsal glands seem principally to be affected in this kind of ophthalmia. 2. By a red and somewhat raised state of the conjunctiva at the edges of the lids. In its progress, sometimes little scabs form at the

root of the eye-lashes, and when these fall off, you may discover little ulcers at the roots of the hairs, which then frequently fall out, and either do not grow again, or a dwarfish kind appear. At a still more advanced stage, a line of ulceration may occur in one or both of the tarsi. You may often find the sequelæ of tarsal inflammation connected with a degree of chronic inflammation of that portion of the conjunctiva which not only lines the lids but covers the globe or white of the eye. It happens, however, almost invariably, that when you perceive this form of ophthalmia to exist in the tarsi simply, or connected with inflammation of the conjunctiva, that it is merely a part of an extensive disorder of the cutaneous and mucous systems, which are so inseparably associated in their functions. The skin may truly be considered as a modification of the mucous membrane, which becomes more delicate in its reflections inwards, as well as in its expansion over the globe of the eye. In the investigation of the pathology of cutaneous and mucous affections, nothing is more remarkable than this, that a disorder of one part of this structure is apt to produce disorder in another, sometimes through remote sympathies, but frequently through the continuity of structure.

Where this condition of the eye exists, you will generally find it accompanied not only by disordered functions of the skin, but by evidences of irritation in some of the internal mucous membranes, particularly of the stomach or small intestines, usually conjoined with a torpid or irregular state of the liver and colon. It is therefore of great importance to take into the account this condition of the internal mucous membranes, which very much predisposes to inflammation of the eye; so that when you find the eyes gummy in the morning you may be sure that there is some disorder in the internal mucous membranes. When the strength is broken up by this disturbance in the functions of the mucous tissue of the primæ viæ, if an inflammation of the eye arises, it has been technically called *strumous ophthalmia*. What has been termed struma or scrofula, I shall show you, in my lectures on chronic diseases, depends on two affections; either on an ill-conditioned inflammation occurring in a debilitated habit, or tubercular diseases. Now ophthalmia tarsi is generally deemed

strumous in the vagueness of technical language, and so is inflammation of the conjunctiva itself, when it occurs under similar circumstances of the general habit. But if inflammation occur in the conjunctiva of a strong or healthy individual, it has been called common ophthalmia; they are one and the same affection, delicacy modifying the characters of the one, while strength modifies the characters of the others.

STRUMOUS OPHTHALMIA.

1. There is redness of the conjunctiva; the surface of it being less or more streaked with red vessels.

2. There is considerable intolerance of light; indeed that intolerance is great in proportion to the degree of the inflammation. The sensibility of the whole system is increased, and therefore pain is felt severely, although the inflammation may be but slight.

3. There is a tendency to ulceration about the lucid cornea.

4. These symptoms occur in delicate habits, or broken up constitutions.

The ulceration, when it does happen, increases the sensibility of the eye so much, that it is more irritable and watery than before. A little vesicle, commonly, is first formed, which, bursting by the motions of the eyelid, afterwards forms a small ulcer there.

How would you distinguish ulcer from a speck or infusion of lymph between the laminæ of the cornea? The diagnosis is very easy. If there be an ulcer of the cornea, there will be a little indentation, which might admit, say the head of a common pin: and if you examine it minutely, you will find a halo of lymph from the attempt made to restore the part by the effusion, and, secondly, by the organization of the lymph.

There is a peculiarity of this affection. It is very apt to return if the patient be exposed to cold, or if he take a meal of indigestible food. But the ulcer which I have before spoken of does not always form upon the conjunctiva near to the margin of the cornea, but sometimes upon that portion lining the eyelids, or, in the first instance, it often exists as a small but irritating abscess in that part.

I shall once more advert to the modifying circumstances of this

inflammation. *Strength* is a modifying circumstance: if inflammation of the conjunctiva occur in a healthy habit, it has been called, as I before remarked, common ophthalmia; but to show you that this affection may be converted into the strumous, according to the condition of the patient at the time, I shall adduce this conclusive fact :—If a person in health be attacked by inflammation of the conjunctiva, it will assume what is called the common character; but if it occur in the same individual when the strength has been broken up, it will assume the strumous character,—a certain proof that the inflammation is modified by the state of the patient at the time of the attack.

SYMPTOMS OF COMMON OPHTHALMIA.

Heat, redness, swelling and pain of the conjunctiva. Even talking about the eye to the patient aggravates the pain and inflammation very materially,—a circumstance not peculiar to ophthalmia, but equally striking in inflammation of the bladder. In a common ophthalmia, patients have also intolerance of light, and a feeling as if particles of sand were in the eye. The inflammation may be either acute, sub-acute, or chronic. If the inflammation be acute, or sub-acute, it is generally attended by fever.

Now if the inflammation be very violent, such as is induced by intense light falling upon the tender eye of an infant, or from the coarse and strong soap which is sometimes used in washing the infant's face, getting into the eye, we may have purulent ophthalmia produced. But, again, if the matter applied to the eye be of a peculiar character, the inflammation produced will generally assume the purulent character, from the peculiarity of the cause. Hence you may perceive that inflammation of the conjunctiva may be modified, 1st, by the debility or broken up state of the patient; 2d, by the strength of the individual; 3rd, by the intensity of a common cause; and 4th, by the peculiarity of a specific cause.

SYMPTOMS WHICH INDICATE PURULENT OPHTHALMIA.

1. A sudden sensation of sand rolling in the eye, or a sudden

sensation of pins or needles pricking the eye. As this form, however, most frequently occurs in infants, you must, in them more especially, attend to the subsequent signs.

2. A second symptom is a great swelling of the superior eyelid.

3. Excessive redness of the conjunctiva, so that it almost resembles in colour the protruded rectum of a child.

4. The secretion of a straw coloured serum, which afterwards becomes of a yellowish or greenish coloured puriform fluid. If you sponge the eye, and look at a portion of the conjunctiva with a good glass you will perceive that the pus oozes from the protruded villi of the conjunctiva. It has been denied that the conjunctiva ever secretes, but here pus at least can be traced distinctly flowing from the conjunctiva itself.

5. It is distinguished generally by the tendency to ulceration, or sloughing of the cornea, and it is in that way very often that the eye is destroyed. This runs sometimes gradually, at other times rapidly, as if from a strangulation of the vessels passing to the cornea, through the preternatural injection of the neighbouring parts. The cornea seems sometimes sunk or imbedded in the red, or raised vessels of the conjunctiva covering the globe. Some of the older writers suspected that this sloughing arose from the eye having been macerated in the pus; this has been denied by most surgeons of the present day. However, I think, that there is some reason for supposing that the cornea does occasionally slough from maceration of it in the pus. An experienced friend of mine has come to the same conclusion, from having observed sloughing in some cases where the eye had been bound up for some days in the pus.

6. It is distinguished by its becoming rapidly chronic or atonic as it has been called. This change is marked by two circumstances; by a change in the appearance of the eye, and of the appearance of the patient. When the inflammation becomes atonic, the colour is more dusky,—of a darker or brick dust hue. The conjunctiva has a very flabby appearance; the pain becomes less, and the secretion more purulent. More lassitude and languor also take place.

7. A disposition to granulation, smooth or thickening. Sometimes the purulent ophthalmia arises chronically, and produces acute inflammation.

Inflammation undergoes further modification from the structure of the part in which it is seated; and this leads me to make some remarks on inflammation of the iris.

SYMPTOMS OF IRITIS.

1. The iris loses its natural colour and brilliancy, principally from the effusion of lymph.

2. The pupil becomes more contracted than natural, and adhesions are apt to take place between it and the anterior surface of the lens, so that the pupil thus becomes irregular.

3. The aqueous humour becomes somewhat turbid, from the effusion of lymph into the anterior or posterior chambers of the eye; just as an effusion of lymph takes place into the cavity of the pleura or pericardium, when these organs are inflamed.

4. It is distinguished by a vascular zone at the junction of the sclerotic and lucid cornea.

5. The large vessels of the sclerotic run transversely across towards the cornea, interspersed with smaller vessels.

6. The pain is deep-seated in the orbit; sometimes it shoots into the temple, and sometimes it has a remittent character, occurring in fits, especially at night, from the increased excitement which appears to exist at that time.

Iritis is sometimes conjoined with syphilis, and sometimes with rheumatism. Though occupying other deep-seated parts of the eye, this inflammation has been called iritis, because that part, being spread like a curtain across, is the most perceptible.

If my observations be correct, a chronic form of inflammation of the retina is more common than oculists generally allow. In literary men, who read much by candle light, a chronic form of inflammation of the retina sometimes occurs, and is almost invariably attended by some chronic disorder of the stomach or intestinal canal. This chronic form of inflammation of the retina is marked by intolerance of light, which is the greatest when the eye is exercised on a bright object. 2. The pupil is

preternaturally contracted. There is, 3dly, a peculiar expression about the face, which the friends generally notice, but which it is difficult to describe in words. Sometimes the retina is the seat of acute inflammation, which is denoted by great pain and intolerance of light, the pupil becoming dilated and at last motionless. Amaurosis is sometimes the consequence of inflammation of the retina, but that affection arises also from other causes. Sometimes from *ramollissement du cerveau*, or softening of the brain; sometimes from disease of the optic nerves themselves; sometimes it follows sympathetically disorders of the stomach, or sometimes it arises from the operation of mercury on the brain, and occasionally it depends on downright exhaustion, as I have seen from great and sudden losses of blood, or from excessive purging in the advanced stages of fever. One of the most common causes, however, is simple turgescence of the vesssls of the brain, or actual slow inflammation of that organ; and what is called weakness of sight, or incipient amaurosis may very frequently be removed by proper evacuations and a spare diet, where it proceeds from this cause, All oculists ought to be good physicians, since affections of the sight are so frequently connected with disorders of internal and remote parts of the body. But some people think and act as if the eye were an independent organ, a piece of machinery which had little or no intercourse with the vital sympathies of the system.

Ophthalmia terminates just as other inflammations do, making allowances for its being modified by the structure of the part in which it is seated. It terminates by effusion, by ulceration, by mortification, and by granulation. First, then, of the termination of the inflammation by *effusion*; this may be either simple, adhesive, or suppurative. It may be *simple*, by a common flow of tears, or by the effusion of serum; you have an example of this when inflammation arises from any foreign particles getting into the eye; they create great irritation and inflammation there, but the offending body being removed, the inflammation subsides by a copious flow of tears. Again, you have a serous effusion sometimes taking place into the cellular connecting tissue, between the conjunctiva and sclerotic. 2. The effusion may be *adhesive*; an

effusion of lymph may, and frequently does, take place. Occasionally it glues the palpebral portion of the conjunctiva to that portion which covers the posterior part of the globe. Sometimes an effusion of lymph takes place between the lameliæ of the cornea, forming what has been called a speck, or nebula, which often remains permanently. Another effect of the adhesive effusion is to unite the posterior surface of the iris to the capsule of the lens, or the anterior surface of the iris to the cornea. 3. The effusion may be *suppurative.* Pus is frequently secreted from the meibomian glands and from the villi of the conjunctiva; it is sometimes formed like cream, into the anterior chamber, and in some excessively severe cases, the whole globe of the eye suppurates. Inflammation of the eye terminates again by ulceration; we see this in the cornea, more particularly in those inflammations which have been called strumuous and purulent. Sometimes it terminates in *mortification*, a portion of the cornea rapidly sloughing, as happens in the violent forms of the purulent ophthalmia. Before the sloughing takes place the cornea loses its transparency, and portions are thrown off successively. The ulcer thus formed may have an unhealthy or a healthy appearance. The breach is repaired by the organization of deposited lymph, so that granulation is the fourth termination of ophthalmia. But other effects are likewise produced not referrible to these heads, as I before explained in treating of the immediate and remote consequences of common inflammation.

LECTURE XXV.

TREATMENT OF THE VARIOUS MODIFICATIONS OF OPHTHALMIA.

The first variety of ophthalmia which I shall mention, is the *ophthalmia tarsi;* the treatment of which is twofold; first, the treatment of the local affection itself, and secondly, the treatment of the disorder of other parts of the body with which it is conjoined.

In regard to the local treatment of the eye, the principal thing

generally necessary is to apply the citrine ointment to the edges of the eyelids occasionally. The best method of using it is as follows :—Take a small camel's hair brush, and having dipped it into the softened ointment, pass it rapidly through the flame of a candle or lamp, giving it at the same time a rotatory motion, between the fingers and thumb, to prevent the hairs of the brush from being burnt. Having thus melted the ointment, smear it lightly over the lower and upper lid, along each tarsal line. For the most part, the only thing beside which requires to be attended to is to wash away the gum from the eye in the morning with warm water, for the morbid secretion acts as an irritant to the eye, if allowed to remain. If the edges of the lids be so much affected as to be thus strongly glued together in the morning, it is better to insert a little fine Florence oil between the lids at night, or to apply a little of the zinc ointment to the tarsi ; but one of the best things to prevent the glueing of the lids is not to overload the stomach at bed-time, or even to disturb it during the day by indigestible food. If the patient does so, the secretion becomes more copious, and a greater degree of irritation is induced in the eye ; indeed that gummy secretion about the eyelids in the morning may be considered as one of the most constant signs of irritation of the stomach. In addition to this, a little laxative medicine should be given if the bowels do not act regularly. Almost all these patients have a furred tongue, and slow or irregular bowels. The reason of this is twofold, either there is a defective secretion of bile, or the colon is torpid without such a deficiency, a circumstance by no means uncommon.

There is not the least occasion to employ mercury, unless you have evidence of a defective biliary secretion, or a depraved secretion of bile independently of the influence of medicine. If you have any doubt on the latter point, give the medicine up for a few days, and satisfy yourselves that it is not thus produced, since the means that are employed, especially mercury often change the character of the stools. Then be guided by the kind of stools ; if they should show a sufficient quantity of bile, omit the mercury, for the fault then is in the colon, and give some

warm resinous aperient, for example, a grain or two of aloes, with the extract of gentium, and, if necessary, a few grains of the extract of rhubarb; and if these do not operate sufficiently, assist them now and then by a little cold drawn castor oil, an excellent remedy where the colon is torpid, and torpidity of the colon is often a cause of torpidity of the liver itself. Infusion of senna is a very good medicine in such cases, especially when combined with some bitter, and warmed by some aromatic water, such as cinnamon. When the stools show a deficient quantity of bile, you may occasionally give an alterative dose of mercury; but as these affections generally occur in those persons called strumous, be very careful to watch its effects, for such persons bear mercury very badly indeed, particularly if they have light hair and light eyebrows. Give, for example, a grain of calomel every other night until the stools become natural; but if you do find them becoming green, chopped, curdly, or slimy, omit the calomel for a short time, and see whether they become natural, for this change in the appearance is the effect of the calomel. Another excellent preparation is the oxydium hydrargyri cinereum, or the grey oxide of mercury, and, what is very extraordinary, it is hardly ever used now; give a grain or two of it every other night in similar cases. The hydrargyrus c. creta is also a good preparation, and so is the notorious blue pill when discreetly prescribed. Once more I repeat, only exhibit mercury where you ascertain, from an accurate examination, that there is a defective secretion of bile, and when that becomes sufficient, leave off all mercurials instantly. But instead of doing this, some persons recommend mercury to be continued in chronic affections, as long as the stools appear unnatural, not knowing that mercury makes and maintains them so in many cases. The external and internal glands, then, are apt to take on a low kind of inflammation, attended by mucous irritation, and the patient, if young and weak, frequently becomes a mass of scrofula. There is no medicine which appears to me to have so powerful an influence in creating that condition called struma, or scrofula, when given repeatedly in the absence of all febrile symptoms. It is, indeed, a common cause of what is called

strumous ophthalmia itself. A third point in the medical management, is the use of the warm wath, the warm salt water bath, an excellent remedy in restoring the healthy functions of the skin, liver, and bowels. With respect to the regimenial management, the food should be wholesome and nutritious. Children should have a meal of bread and milk in the morning, a meal of plain animal food, and a small quantity of vegetables in the middle of the day, and bread with milk again in the evening; cakes, sweetmeats, fruits, being avoided. It is important even to attend to the manner in which vegetables are dressed, especially the potatoe, which should be mealy throughout its whole substance, for then it is digested easily enough; but there is nothing more difficult to digest than an imperfectly dressed, hard, or heavy potatoe. Another point to attend to is the *air* which patients breathe, and that, if possible, should be pure. Plants languish in a thick close atmosphere, and human bodies do the same. The genuine cockney, therefore, of close, crowded, contaminated situations, is always a degenerate animal. One secret in the maintainance of health in the metropolis, is regular exercise in the open air. *Exercise*, indeed, is another important point, for it has great influence upon the secretions of the skin, stomach, liver, and bowels, and consequently on the process of digestion. The clothing, too, should always be considered in our variable climate. A very delicate child is easily chilled; the skin, stomach, liver, and bowels thereby become disordered, as an attack of strumous ophthalmia is by no means uncommon, which is always the most difficult of cure when the atmosphere is damp and cold. Sleep at early hours is also of more consequence than is usually supposed, for hardly any thing tends to maintain the associated disorder of the skin, stomach, liver, and bowels, with this low indolent kind of inflammation, more than sitting up late at night. Cold and improper food, with want of early or sufficient sleep, are the most common causes of ophthalmia tarsi, and should therefore be attended to in conducting the cure.

Now as to that modification of inflammation of the eyelids combined with chronic inflammation of the conjunctiva, it will generally yield to a similar local and regimenial management.

This modification is by no means uncommon in adults, and it is surprising how rapidly many patients recover when treated in the above mentioned way, I saw a lady who had this form of ophthalmia. Her eyes were gummy and red, like a ferret's; she was obviously out of health; her skin was pale, her tongue furred, her sleep unsound and unrefreshing, and her stools morbid and scanty. This, indeed, is generally the condition of patients with such a chronic affection. On investigating the habits of this patient, I found a cause sufficient to account not only for the inflammation of the eyes, but for all the other symptoms. I desired her to put down on a piece of paper the quantity and the kind of all fluids and solids which she took in the course of the twenty-four hours. It was an enormous quantity; fifty or sixty ounces of solids and fluids was this lady in the habit of swallowing daily. I put her upon a simple diet of sixteen ounces of food in the day, and the ophthalmia disappeared in a very short time. Patients themselves must mainly contribute to cure chronic affections. There is very little efficacy in medicine, abstractedly considered in such cases. It is only one of many measures the conjunction of which is necessary to produce the desired effect. Do be honest in your intercourse with your patients. Remove from their minds that mysterious and mistaken efficacy which they ascribe to mere medical prescription, and teach them to rely less on medicines, and more on themselves, in the cure of all such affections. Endeavour to correct all bad habits. In this chronic affection, however, a stimulant application sometimes does good, and, in general, nothing answers better than a weak solution of the sulphate of copper, or alum, or a very minute proportion of the nitrate of silver in water. Let the rule of application be the diminution of the pain. If there be any local increase of pain it does harm.

A frequent form of inflammation is a sub-acute inflammation of the conjunctiva, occurring in delicate habits, namely, *strumous ophthalmia*. In this affection there is a tendency to ulceration in the cornea, or about its margin, with an intolerance of light disproportionate to the degree of the inflammation. When you find a patient with a skin hotter, and pulse quicker than natural,

then local blood-letting has a good effect; apply the leeches to the temples, or to the epigastrium. Certainly if the tongne be red at the tip I would rather apply them to the epigastrium. I do not think it is of much importance where you apply the leeches, but I would advise you not to apply them too near the eye, as I have known the puncture surrounded with a sort of erysipelatous blush, which kept up the irritation in the eye. If you were to evert the lower lid, and find the vessels very much enlarged, and if you have a very steady hand you might pass very delicately a small instrument along the conjunctiva lining the lid, and empty the vessels by making a line as fine as a hair; but take care to wash the eye perfectly clean of any coagula afterwards, as they otherwise become a source of irritation. Scarification does harm, unless it be most delicately performed. After you have reduced the inflammation by local bleeding, sometimes great benefit results from blisters, provided they do not quicken the circulation of the blood; count the number of the pulse, and if you find it quicker after the blister has been applied, you may be sure that it does harm; if the heart's action be increased, the inflammation is generally increased. The diet should be regulated by the presence or absence of fever. If there be fever, the diet must be of the blandest kind, such as arrow-root, gruel, or milk-whey. Sometimes it happens that this form of ophthalmia assumes an acute character, becoming suddenly very severe. This was the case in a boy who had ulceration of the cornea, but I did not hesitate to bleed from the arm to approaching syncope, and immediately afterwards gave him a dose of opium, by which he recovered. When the fever is removed, the diet should still be simple, but animal food may then be allowed, and cold should be avoided by the patient till the strength be restored; for cold and indigestible food are apt to occasion a relapse of the inflammation.

Another form of inflammation of the eye has been called common ophthalmia, *or common inflammation of the conjunctiva*, it is the same as the former, only it occurs in a strong subject, whereas the other occurs in a debilitated one. You must, in its treatment, be guided entirely by the degree. If it be acute,

bleeding is the main remedy; you may take blood from a vein, from the temporal artery, or by cupping; there is no advantage which any one of these modes can be said to have over the other; but in inflammatory cases, where the excitement is not high, bleeding by leeches seems to affect the heart's action, and local disorder, through a less quantity of blood, and hence their utility in mucous inflammations. You must be guided by the effect which the bleeding produces in acute common ophthalmia; you must bleed generally to approaching syncope, and you will then perceive the conjunctiva blanched, and the pain will be removed; and if you exhibit a full opiate, as soon as the patient recovers from the faintness, you will often prevent the necessity of a repetition of the operation. A friend of mine, in the country, has been in the habit of bleeding patients in common acute ophthalmia, whilst they are standing, because syncope approaches then with the least loss of blood, but he takes especial care to lay the patient down before the syncope takes place.

A second remedy is the use of purgative medicines, as a combination of calomel and rhubarb, or jalap, followed up by the saline purges, and where the inflammation returns you may give colchicum, say four or five grains of the powdered bulb every six hours, until nausea be induced, and then it must be withdrawn. I have had less occasion to repeat blood-letting since I used the colchicum. I recollect having seen a gentleman a few years ago, who had a violent attack of ophthalmia, for which he was bled largely both generally and locally, and his health was so broken up that he never recovered his former vigour; the remedy proved nearly as bad as the disease. Now, from what I have since seen, I believe that if colchicum had been given, he would have recovered much more rapidly, and without such repeated blood-lettings.

A third mean for the removal of this inflammation is a blister behind the ear, or the nape of the neck.

Fourthly, the use of lotions is attended with some advantage, and nothing answers so well, generally, as tepid water; sometimes, however, cold answers better; you cannot lay down any precise rule when you shall use cold, or when tepid water,

but you must consult the feelings of the patient; if the tepid water do not soothe, then apply the cold, but generally the cold increases the inflammation of the eye. There are various medicated lotions used in the treatment of acute common inflammation of the eye, but I believe that they usually do more harm than good. If you find the inflammation difficult to get rid of by the measures which I have just mentioned, you may give cautiously a combination of calomel and opium, until the calomel slightly affects the mouth, and then discontinue it at once. Nauseants, especially colchicum, and the tartarized antimony are sometimes very useful when the inflammation does not readily yield to the ordinary measures. But the colchicum is preferable, if it be rightly managed.

Now, in regard to the regimenial management, diet is the principal thing to be regulated; it must be bland in all these cases as long as the inflammation continues. Light must be excluded to a certain extent; but it is bad to keep the patient altogether in a dark room, because the admission of light to the eye afterwards irritates it excessively. The eye should be shaded, but not by any thing tied closely over it, for that accumulates the heat; the shade should be at a little distance from the eye, like the fore part of a cottage bonnet. Another point to be attended to is, the equalisation of the temperature in which you place the patient; it should never be higher than 62 degrees; the trunk should be erect, and the patient should not lay his head on a pillow on that side where the eye is inflamed, since the heat is then concentrated about the part, and the inflammation, is thereby aggravated. When you have succeeded in greatly lessening the inflammation, when the pain, excessive redness, intolerance of light, and scalding of the tears, have subsided, then the conjunctiva is apt to assume a flabby appearance, and a chronic, or atonic form of inflammation may continue for some time. Now in this state of the eye, the vinum opii may be used with advantage, one drop at a time, morning and evening, being put very gently into the eye, Some washes may be used in this stage of the affection, often with benefit, as a grain of the oxymuriate of mercury to four ounces of distilled water, with a drachm of the vinum opii, or the

sulphate of copper wash, in the proportion of two grains to the ounce of water. When a chronic inflammation supervenes upon an acute, it requires the employment of the same measures, only used to a much less extent. But it is a common error with patients, when they think they are getting well, to neglect themselves, and the consequence is that the disorder returns.

The treatment of the next form which I have to mention, is the *purulent ophthalmia* an inflammation modified by the intensity of a common cause, or by the peculiar property of a specific one. It varies in its character; it may be acute, sub-acute, or chronic, or atonic; and as it often terminates rapidly by sloughing of the cornea, and other disorganisation, so it requires to be actively treated. When it occurs in the adult, you must bleed at once to approaching syncope, and give a full opiate soon afterwards. Mr. PEACH repeated the bleeding whenever a feeling of sand in the eye announced a return of the inflammation. You should, at the same time, give purgatives, and combine with them colchium, which are excellent auxiliaries. One peculiarity of this affection is, that it becomes rapidly chronic or atonic. This alteration is denoted by the conjunctiva having a dirty and flabby appearance, while the patient becomes more affected by languor and lassitude. Then you must lay aside the active antiphlogistic treatment, give mild aperients, and use the alum wash, which in these cases is extremely useful. At first, two grains of alum to an ounce of water is often sufficient, gradually increasing the proportion according to the patient's feelings, in fact, being guided by the alleviation or increase of pain. As cases of this kind may be communicable from person to person, the operator should take care to avoid any contact of the matter through his hands to his own eyes, or through the spirting of the lotion when he may inject it into the eye. He should also give all those directions to the attendants which may enable them to remain free from such a formidable disorder. As this affection most frequently occurs in very young children, local bleeding is the best for them in the first instance, with the use of the astringent lotion as soon as the atonic stage commences. But in all such cases, see that the child has its natural food, the mother's or the nurse's milk; regulate

its bowels daily, and be sure that it may breathe a pure atmosphere, which has great influence in such examples. In the advanced stages, bark is sometimes beneficial, especially the sulphate of quinine, where sloughing of the cornea is threatened or has occurred, But if you adopt the treatment before mentioned in the first instance, you will, in general, not only prevent this, but the occurrence of that granular state of the lids which is often exceedingly difficult to remove under every treatment which has been recommended. Upon the whole, a subdued antiphogistic one, with a very strict regulation of the diet, aided by the use of the blue stone locally, or Goulard's extract.

TREATMENT OF IRITIS.

This is remarkably simple ; moderate bleeding, followed up by calomel till the mouth be affected, together with the local application of the extract of belladonna, are the principal remedies. If you wish to affect the system rapidly with calomel, you should bleed first, and give a saline purgative ; and calomel then given, in small repeated doses, will remove the disorder very rapidly. The effusion of lymph takes place rapidly in the acute form, and less rapidly in the sub-acute form. Belladonna must be at the same time employed to dilate the pupil, because if adhesions should form in the contracted state of the pupil, the vision might be permanently impaired. But I must advise you to be particularly cautious, while you are giving the calomel, to watch its effect, and take into account the constitution of the patient ; whether, for instance, he has any hereditary, sexual, ætal, or acquired weakness, for if he have, you must be careful lest the weak part suffer an injury from its operation.

When the strength is broken up by a mercurial course, a patient is very liable to have a relapse of iritis, or to an attack of inflammation in the weak organ, from exposure to mere ordinary causes, especially cold.

Inflammation of the retina is occasionally met with, especially under a chronic form, for the acute is even more rare. When it acute it will require the employment of the most active measures in the shortest possible time, otherwise the sight will

be inevitably lost. The chronic form is generally accompanied by some chronic disorder about the stomach, liver, and bowels, and that must be considered attentively in the treatment. Sometimes it is attended by a chronic inflammation of the brain, of which intolerance of light is a frequent symptom; but you will have no difficulty in detecting this combination if you recollect the symptoms which I before enumerated as diagnostic of that affection.

LECTURE XXVI.

TYPHUS FEVER.

I HAVE now to enter upon the investigation of those agents in nature which have not the properties of common causes, but which are marked by special ones; I shall here also be able to show, by facts, and fair deductions, that these peculiar causes, namely, the poison called malaria, human contagions, and certain epidemic conditions of atmosphere, likewise produce three forms of fever—the congestive, simple, and inflammatory—in reference to their internal pathology, blended, however, with some peculiar effects proceeding from the peculiarity of the remote cause or occasion; such effects being the most conspicuous in the external pathology, such as the rash of measles, the eruption of small-pox, or the efflorescence of scarlet fever. This doctrine, shall be confirmed by an appeal to symptoms, dissections, and the effects of remedies.

With respect to the peculiar causes which produce fever, there are some which may be termed *infections* and others *contagions*, for remember that I make a distinction between infection and contagion; infection is a local taint, or contamination of air, which arises from a combination of agents or circumstances external to the human body; whereas as far as human inquiry has yet legitimately extended, contagion originates, not without, but within the body, an apparently subtile secretion from the blood itself, the mode of the primary generation of which is yet one of the arcana of nature. Besides, there appears to be another difference between contagion and infection, namely, that

contagion is unquestionably communicable from person to person, this communicability being the true test of a contagion: whereas, though it has been presumed, that febrile disorder commencing from an infection, as before defined, propagates itself by contagion, by the new formation or assimilation of some subtile and special power or poison—though this, I say has been presumed, yet it has not, to my mind at least, been indisputably proved to be the case; and to me it appears a problem still requiring a satisfactory solution. That fever arising from infection propagates itself by contagion is the prevailing dogma of time-established schools and colleges; but there it amounts only to a prejudice, an opinion taken up and maintained without due examination.

MALARIA.

In this Lecture I shall confine myself to the consideration chiefly of one infection, namely, that which is vaguely called *Malaria*, or *Marsh Miasm*, and which originates from certain conditions of the earth and air. It is an exhalation which, evading our senses, is only, in the present state of our knowledge, distinguishable by its effects. What are these effects? These are, first, the production of an *intermittent* form of fever; secondly, of a *remittent* form of fever; and thirdly, of a *continued* form of fever; each having, as will be shown in my next Lecture, a peculiar combination of symptoms by which they differ from common fever, although their internal pathology is similar to fevers proceeding from common causes, that is to say, it is congestive, it is simple, or it is inflammatory fever, under the general operation of this peculiar agent: the intermittent, remittent, and continued forms of fever, each having certain peculiar combinations of symptoms as the regular effects of malaria, or marsh effluvia. The intermittent form of fever is simple, the remittent inflammatory, and the continued still more highly inflammatory. Though the intermittent, remittent, and continued forms of fever, from malaria, pass and repass into each other, yet it is to the continued form that the designation of typhus has been attached, under the supposition that it proceeds from human contagions, and that it is not related to the intermittent and remittent forms.

TYPHUS FEVER.

Now it happens that we have no correct definition of typhus, nay, not the semblance of a definition, for it is an insult to common sense to admit CULLEN'S definition to be such, which, including none of the essentials of typhus fever, is so loosely worded as to be applicable to the last stage of any fever where the brain has been much affected in the first. Indeed most of CULLEN'S definitions, as they are called, are merely nominal, not real definitions, since they are abstract words, by which a number of symptoms are strung together, without any reference to the pathological conditions upon which those symptoms depend. This is particularly the case in regard to what CULLEN denominated *febres*, concerning the true nature of which he seemed to know little or nothing; and yet this is the author who is held as a guide in most of our schools and systematic works! You are aware that CULLEN has certain artificial distinctions, which he calls classes, orders, genera, and species. A definition of a class, nosologically, is the most general description which can be given of affections which have symptoms in common; and a definition of an order is the next most general description, while that of the genera and species becomes more and more particular. Now CULLEN'S definition of *pyrexia* is this, "After shivering succeed, a quick pulse, increased heat, with interruption and disorder of several functions; diminution of strength, particularly that of the joints." That this definition is very general must be admitted, indeed nothing can be more indefinite; besides it is really inaccurate as to matter of fact. CULLEN here assumes, that shivering is always an essential part of fever; but I showed, on a former occasion, that fever sometimes arises from the direct application of a stimulant without any cold fit or shivering at all; neither does the hot stage invariably follow the cold one, as this definition implies, for the cold stage sometimes remains and constitutes genuine congestive fever. But to go to his order *febres*, which he defines thus—"Pyrexia, preceded by languor, lassitude, and other signs of debility, without any *primary local disease*."—This definition, you will

perceive, is only a repetition of the former, with the addition of a particular clause, namely, the words, "no primary local disease," by which he distinguishes it from the class. Pyrexia is made by CULLEN, a part of the definition of febres, and the definition of pyrexia describes the functions as being much disturbed, yet we are told, even in febres, that there is no *primary local disease*. He assumes this, but it is a metaphorical and medical absurdity, for no disorder of the functions can possibly take place without having been preceded by some change in the organs connected with such functions, and that change is, as I before attempted to prove, either a state of disorder or disease. CULLEN, like many of the older authors, did not, it must be confessed, discover the existence of that disorder, and therefore the term idiopathic fever was an admirable shelter of expression, one nicely fitted to conceal an ignorance repecting those alterations which take place within the body.

If we pass on to CULLEN'S *continued fever*, he describes it after this fashion: "Fever, without intermission, not arising from marsh miasma, but continuing with remissions and exacerbations, although not very remarkable, two paroxysms in each day." Here is an assumption that a continued fever never arises from malaria, or marsh miasm; but the truth is, that this cause, operating in almost all parts of the inhabited world, does very frequently indeed produce continued fever, that usually typhus. If we pass on to his sub-divisions of continued fever, we find his *synocha*, his *synochus*, and his *typhus*. As to his definition of synocha, he says, the heat is much increased, the pulse frequent, strong, and hard, the urine red, the functions of the sensorium little disturbed, Now only recollect that synocha is arranged under the order febres, where, according to CULLEN, there is, "no primary local disease." But did any man ever see a fever, attended with such symptoms, which was not preceded by some primary local disorder? Most confidently, I answer, never. Synochus, we are informed, by the same authority, is a fever compounded of synocha and typhus; a synocha in the beginning, and a typhus towards the end. Indeed! Is a disorder really one thing at the commencement, and another at the close? Do small pox, measles, scarlet fever, pass into each other? Is there any known

affection which so changes its character, nay, its constitution? This is surely a nosological subtility, not sanctioned by what is yet known in the changes of explored nature. But let us hear what CULLEN says about typhus. It is, agreeably to his creed, a contagious fever, in which the heat is but little increased; the pulse weak, small, and in general quick; urine little changed; the animal functions much disturbed; prostration of strength. But did any man ever witness such a concourse of symptoms unpreceded by primary local disorder? Assuredly never. Moreover, this enumeration of symptoms is no more applicable to typhus fever than to any other fever, where the powers of life are giving way, and where the brain is oppressed. In truth, it contains no correct allusions to genuine typhus fever.

REMOTE CAUSES OF TYPHUS.

The remote exciting cause of typhus is peculiar, but there are certain circumstances which favour the operation of this cause, and they may be called the *predisposing causes*, all of which operate in one mode, namely, by producing *debility*. It is in this way, if an army be in full retreat, the minds of the men being harassed, and their bodies enervated, and if they pass over, and especially if they rest in, a district where the malaria prevails, typhus is almost sure to break out amongst them. It is on the same principle that famine becomes the predisposing cause of typhus, for then people experience physical want with mental distress. The history of this fever in Ireland has often been connected with scarcity, of which many proofs might be given. The epidemic which occurred in and about London, in the year 1818, shows the influence of the same cause; many of the poor were then almost starving, and the summer having been unusually hot, they were very much predisposed to the attack of typhus. Fasting predisposes powerfully in some; thus, if a man go out without his breakfast and fatigue himself by a long walk or business, he is very liable to be attacked by this disorder, if exposed to the exciting occasion. It is for the same reason, namely, that of depressing the mental and physical powers, that fear operates so decidedly in predisposing to this affection. The Romans were so well aware of this, that they had no less than

three temples in different parts of Italy, to inspire the people with confidence, dedicated to the goddess Febris. In modern Turkey, the doctrine of predestination prevails among the natives, and travellers assert that they are less liable to plague than strangers who do not believe in that doctrine to the same unqualified extent. Charms were worn in ancient times, and incantations performed for the purpose of communicating confidence; nay, even in the present times, people often put camphor bags about their necks, which give the wearers courage, and courage is the best preventive of typhus. The weather also powerfully predisposes to the influence of infection, especially damp still weather, and therefore the autumn generally favours its operation. Cold is supposed by some a cause of typhus, but it is merely a concurrent one, by weakening the body. Women, upon the whole, are more liable than men, but the strongest individual may be attacked, if exposed to a concentrated malaria, or marsh miasm.

It is now nearly six years ago since I attended an individual who had an intermittent fever or ague, distinctly marked by the cold, hot, and sweating stages, followed by a perfect intermission, and recurring at certain intervals. But in a few days this fever lost the intermittent type, it became as distinctly remittent for a few days, and then this remittent changed its character and became continued, and at last assumed the most malignant symptoms of typhus. This case made so deep an impression on my mind, that I could not help asking, whether intermittent fever, remitteut fever, and the continued fever, called typhus, might not be modifications of one and the same disorder. I believe malaria to be the primary source of what is commonly denominated typhus fever, that this fever has an intermittent, remittent, and a continued form, and that each of these forms so pass and repass into each other as to show that they all are really modifications of one affection, as far as their remote exciting cause is concerned.

What are the facts which justify the opinion that typhus arises from malaria?

1. Typhus often arises simultaneously, in single cases, in places remote from each other. This circumstance frequently

occurs both in and about London, and I ask, how is it to be explained on the doctrine of contagion, no direct or indirect intercourse having existed, by persons or things in these situations?

2. It often attacks *many persons* at the *same time*, and in the same place. An instance of this occurred some time ago, in which several children were attacked in one day, in a school where no fever had previously prevailed. How is that to be explained on the doctrine of contagion?

3. Where many persons are attacked in the same place or district, if you trace the history of the cases minutely backwards, you will generally find that some appeared under an intermittent, some under a remittent, and others under a continued form, a fact for which the doctrine of contagion cannot account.

4. These forms, namely the intermittent, remittent, and continued, pass and repass into each other in many cases, the intermittent becoming remittent, and the remittent becoming continued; while, on the other hand, the continued sometimes becomes remittent, and the remittent sometimes intermittent; and does the doctrine of contagion at all explain this conversion? It certainly does not, whereas the doctrine of malaria does, since it produces an intermittent, a remittent, and continued fever, convertible into each other, a peculiarity which is not observable, so far as I know, from any other remote occasion whatever.

5. Typhus *prevails* most remarkably in *particular places*. The common opinion is, that it prevails only in crowded situations, but this is a great mistake, as can be easily proved by adverting to facts, which are exhibited within the metropolis, and without its boundaries in the most open districts of the country. A house had been shut up for some time, when two young persons, who had been visiting in the country, returned to it, and were shortly afterwards seized with typhus fever, yet this house was situated in one of the most airy parts of the town, where I have known other cases to arise. I was riding over a common one day, with a medical acquaintance, many miles distant from London, and he pointed out certain widely scattered cottages in which typhus fever occurred under a remittent and continued character. It

prevails in some particular spots, not only in London, but also in the vicinity, sometimes in solitary houses, and sometimes in the most beautiful villages, especially in one only a few miles distant. The same thing occurs in foreign countries, in Italy, in America, and in Turkey, indeed there is scarcely a district in London in which it does not appear, but much more in some than in others. There is one district in particular, situated partly in one parish and partly in another, where I have traced the rise of typhus, at different times for nearly half a century back; and it is a most curious fact, that it thus occurs in certain parts, or rather patches of the metropolis, as if limited by lines, beyond which it does not pass. Can the doctrine of contagion explain this phenomenon?

6. The origin of typhus is connected with *certain states of the air* as well as of the *earth*. It is most frequently found in that state of the atmosphere, when the temperature varies from about 50° to 80°. It hardily prevails at all in winter, if the air be cold, and the earth locked up by a frost; it usually appears more rife in spring, still more so in summer, and most of all in autumn, when the air is still thick, and warm in the middle of the day, and when the putrefactive process on the earth's surface is, perhaps, the most active and general. Since April 1824, to the present time, December 1824, typhus fever has been more than usually prevalent, apparently from the influence of the warm moist weather; but to show that the earth and the air are both concerned in the production of its original cause, I may mention, that while it has been very common in several districts which I could name, it has not occurred, as far as my observations have gone, in others, especially in Islington, in the higher parts of Kensington, and about Wimbledon-common, which are high and gravelly situations, and which have been remarkably exempted from the visitations of typhus. What is still more striking, a friend of mine who resides in Norfolk, and who frequently used to meet with typhus in his district, arising from malaria, under an intermittent, a remittent, and a continued form—what is very remarkable, is, that he has not met with any cases for some time: and the reason of that is, because the district

usually infected by malaria has been covered by one continuous wave of water from the heavy rains, but he is sure to meet with it when the water subsides, and when a slime is presented to the sun, as happens in Egypt from the overflowing and subsiding of the Nile.

Some facts may now be adduced to show that typhus really does arise from a peculiar terrestrial exhalation. A very respectable man whom I attended, and who laboured under a very severe continued typhus, marked by petechiæ, brown tongue, and enlarged glands in the groin, contracted the affection, with four or five other persons, from having stood in a kitchen, the floor of which had been overflowed by a slimy and offensive fluid from choked drains. Before I retired from my late office as Physician to the Fever Hospital, a man, his wife, and two children were sent in, all affected by typhus. The account which this man and his wife gave of themselves was this, that they had been into the house adjoining to their own when the family had a fever, and that they had caught it there. I went to the village from which these people came, and took one of my pupils with me, but on inquiry we found that the fever which had taken place in the adjoining house was the scarlet fever, and that it had occurred more than four months before this man's family had been attacked by typhus. This may caution you as to the implicit reception of human testimony. On further investigation I ascertained, that the fever which appeared in this family in some had been intermittent, in others had been remittent in the beginning, and had afterwards become continued. Besides this was the spot where typhus usually broke out in that village, and it was surrounded by an open common sewer. A young physician, a pupil of mine, lodged in a house, the mistress of which was attacked by typhus, the drains being in a bad situation and state. She recovered. Some time, several weeks indeed afterwards, the servant was attacked, and also recovered; but my young friend took the alarm about malaria, and changed his lodgings. Many months afterwards he returned to this house, and being fatigued by long walks, and broken up by hard study, he had not been long there till he in like manner

was attacked by typhus, but he also got well. There is one house in the Borough, in which I have attended three persons successively for typhus, the last of whom was one of my pupils, and he informed me, from inquiries made after his recovery, that though in a few years the families had been repeatedly changed, yet that some of the members of each family had been attacked. A common open sewer runs behind the house. The Borough is one of the districts where malaria prevails, and the drains are in a very bad state in many places. Again, at the west end of the town, four persons were seized by typhus on the clearing out of a foul dirt-hole. A friend of mine who practised long in Demerara came to the same conclusions, namely, that typhus arose from malaria, and that it was intermittent, remittent, or continued. On one occasion typhus attacked a great number of the soldiers in the barracks; and walking one day round with an officer he observed that the pales were blackened at a particular spot, and as the wind blew from that quarter towards the barracks, it struck them, that the cause of the fever emanated from that spot. It was examined, and it was found to be an old drain, which had been filled up with vegetable matter then in a state of putrefaction. It was cleared out, and typhus disappeared from the barracks. My friend met with other examples of the same kind equally remarkable. Now I ask you as honest men of common sense, I ask you as the pure guardians of the public welfare, and the genuine lovers of medical science, whether all these facts, relatively and conjunctively considered, do not show that malaria, and not human contagion, is the primary source of typhus fever? The investigation of the circumstances under which malaria is formed is one of the most important to which a philosopher and philanthropist can direct his mind and heart. The formation of this miasm seems to be connected with a certain degree of moisture and warmth, favouring the decomposition perhaps both of animal and vegetable matter. Dr. DWIGHT, an American divine and traveller, has perhaps made the nearest approach to the discovery of this subtile agent. When on his travels about the lakes of America, he found that typhus did not prevail round the margin of lakes which were fed by

natural springs, and which were bright upon the surface; but on the contrary, it did prevail round the margin of those artificial lakes which, not being thus fed, were not only dull upon the surface, but covered occasionally by a dirty film, which, on experiment, he found to be the putrefactive product of animalculæ which are existent in vegetable matter. But I would strongly recommend you to investigate this subject, since it involves the question of the prevention of a disorder which exists in most parts of the world.

Typhus fever, in proportion to the population, was much more prevalent in London formerly than it is now, and this may be accounted for by the improvement which has taken place in the ventilation, draining, and general cleanliness of the city. Erasmus mentions that in the time of Elizabeth the royal drawing-room was strewn with hay, and we know that the streets were narrow and dirty, the houses ill-drained, and the general habits of society much less cleanly than at present. Though much yet remains to be done, perhaps we might compare the state of modern London to that of ancient Rome for cleanliness and the preservation of the public health. Celsus, Livy, Strabo, and Virgil, have all alluded to malaria, and unquestionably the health of the people was preserved by the formation of regular *cloacæ* to drain and receive the filth of the city. In the reign of Augustus curators were appointed to cleanse the streets and keep the cloacæ in good condition. The ancient Romans, tempted by their fine climate, lived much in the open air. Besides, as the government conciliated the people as long as any traces of liberty remained, the public buildings were magnificent, and much frequented by them ; and unless great care had been taken as to cleanliness of the earth's surface in particular, typhus must have been very prevalent there. One distinguished political writer has suggested, that in every government there ought to be a minister of health. Be this as it may, I am sure that London admits of considerable improvement, in reference to the prevention of malaria, and consequently to the prevention of typhus fever.

It is a singular circumstance, that when I first settled in London, the current opinion among the profession was, that typhus fever originated solely in human contagion, and it is remarkable

that it should have been reserved for me to discover that mistake in this metropolis. But the discovery, from what I before mentioned, was quite accidental, and I take no credit to myself for having made it, though, when I reflect upon it, it gives me great pleasure, because whatever prejudice may exist in the profession, the discovery will make its way, the truth will triumph, and prove useful to mankind. Malaria, then, I hold to be the primary source of typhus fever. That I consider as a settled question. But this question involves another, namely, does typhus fever, thus originating, ever become contagious? Does it ever acquire the property of communicating itself from one person to another, like small-pox, measles, or scarlet fever?

I once believed typhus fever to be contagious, but I feel it my duty now to declare, that I have lived to doubt the correctness of that opinion, and shall not decide till I have made the most extended and complete inquiry. But I can say, from a review of a great many cases, that if ever typhus prove contagious, the circumstance of its being so must be rare, and that the public alarm upon the subject is not sanctioned by what occurs in London.

It must be recollected also, that most of the poor remain in their houses till the very last stage of typhus, and consequently, if this disorder were so contagious as is generally believed, it would spread in all directions. If small-pox, measles, and scarlet fever, thus existed in almost every district, and if they were thus allowed to advance to the last stage without removal into some hospital, there can be no doubt but each of these affections would be diffused, as it were, all over London. Now why is not this the case in regard to typhus fever? Why, if it be so contagious, is it limited to particular places, beyond which it does not pass? Why does it observe this law, so different from that by which small pox, measles, and scarlet fever are regulated?

Again, I have known a great many instances in which patients labouring under typhus were removed into a fresh atmosphere, and yet in no case did the disorder propagate itself to any other individual. Had the cases been those of small pox, measles, or scarlet fever, they would have been communicated to many

persons, provided those persons had not been before the subjects of such affections. Why does this difference exist between typhus fever, small pox, measels, and scarlet fever? Does it not show that they are, generally speaking at least, essentially different as to the capability of their being communicated? Besides, I have known wives kiss their husbands again and again, when the tongue and teeth of the latter were crusted with the sordes of typhus fever,—I have known fathers and mothers do the same thing to their children similarly situated,—I have known mothers suckle their children while they were subjects of typhus,—I have known persons in health sleep in the same bed with those sick of typhus,—and yet, in none of these cases, has the disorder been communicated. Perhaps we may be enabled to throw some light upon this obscure subject, upon the difference between infection and contagion, by referring to some facts observable in certain cases of erysipelas, and of fever following puncture in the dissection of bodies undergoing the putrefactive process.

I have repeatedly observed, that if the wards of an hospital be crowded with bad cases, when the air is so stagnant without as to prevent the removal of the foul air within from the fresh air without; I have repeatedly observed, that erysipelas arises under such a combination of circumstances, and alone under such a combination, in the place already specified. In one person the remote occasion shall appear to be the puncture of a leech; in another, cold applied to the cheek; in a third, it shall arise from food offending the stomach, and in a fourth, it shall arise spontaneously, without there being such apparently concurring cause. In the progress of such cases, a continued fever arises, which so exactly resembles the continued typhus from malaria, that putting out of consideration the external erysipelas, it would be difficult, perhaps impossible, to distinguish it from continued typhus of marsh miasm. Though I have carefully watched the rise and progress of this form of erysipelas, which you know I call the erythrematic, by way of distinction, yet I have never known one instance of it in which it appeared to propagate itself from person to person. It occurs within a local taint or contamination of air, and persons removed from that air do not communicate the

affection. On reflection, it appeared to me highly probable, that this local taint or contamination of air was the product of the odour of the stools, urine, breath, and perspiration. When I was physician to the Fever Hospital, I induced the committee to establish convalescent wards; and as they enabled me, while I was there, to keep the receiving wards much less crowded, this expedient, together with free ventilation, nearly proved a preventive of the erysipelas, for I only had two slight cases afterwards during the whole of the time which I remained in that office. With respect to the low fever which sometimes follows puncture in dissecting, it also puts on so exactly the character of continued typhus from malaria, that, losing sight of the original puncture, the inflamed absorbents up the arm, and the tender glands in the axilla, in twelve cases which I have witnessed, I could not have distinctly drawn the line of demarcation. Yet in none of these examples has the disorder propagated itself, though I have noticed their progress very narrowly, and though most of them occurred among my pupils in confined situations. Moreover, GASPARD has shown, by experiment, that putrid animal or vegetable matter, introduced into the blood, occasions a fever of the typhoid or typhous character.

It would appear, then, that a fever having a peculiar intermittent, remittent, and continued character, arises from malaria, and malaria alone, as far as my observation goes; but it would also appear, that a fever of the continued form, with a typhoid or typhous character, arises, 2dly, From alocal taint or contamination of air from the odour of the stools, urine, breath, and perspiration; and, 3dly, from the introduction of putrid matter, as in the case of puncture from dissection, or of the experiments made by GASPARD on the lower animals. Now does it ever happen that persons labouring under this form of fever so contaminate the air by a like miasm, or putrid product, as to affect those who approach them in a like manner? Or does it ever happen, that the clothes of persons who approach such patients are so imbued with such a miasm, or putrid product, as to give it off again, and occasion thus a similar fever in individuals previously healthy?

These are questions which can only be answered by an observation at once the most minute and extensive; and though I have been so long and so laboriously attending to the subject, I must pause, must leave my mind open to the reception of future facts, and decide accordingly. In the mean time I would say, that the thing is possible, but that I have not yet met with any well-authenticated and considered facts which would justify me in drawing such a conclusion. Common candour, however, requires me to state, that I have met with some cases, a few, indeed, out of a vast many, which at first sight gave a strong colouring to the doctrine of contagion, but which, duly considered, are explicable on that of malaria. Thus, for instance, the sister of a young lady who died of typhus, requested to see the body the day after death, and, while standing over it, she became faint and sick, and had an attack of typhus. But the lady, whom I saw in a dying state, and who soon afterwards expired, lived in a house where I had traced the existence of malaria for some years; her sister, the second affected, had also lived in that house, and is it not, therefore, probable, that the sight of the body, by debilitating her frame, was only the predisposing cause, and that this second individual, like the first, had been exposed to malaria, the predisposing cause?

One of the porters of the Fever Hospital was attacked by typhus, and an excellent physician told me, that this surely was a convincing proof of the contagious nature of the disorder. But I replied that this porter had been almost daily in districts where malaria prevailed, and it turned out, in investigating the case, that it had the character of a quotidian ague a week before it put on the continued form, thus showing, that it had arisen from malaria. Nurses about the hospital are occasionally attacked, and especially those who wash the clothes of the sick.

In allusion to the influence of smells, I may mention, that I have seen individuals who, being debilitated by disagreeable odours of a *common* nature, were seized, some by intermittent, some by remittent, and others by continued typhus; and in such cases we can only suppose, that the disagreeable odour of a *common* kind

had been the *predisposing* cause, since the symptoms which arose were those of a *peculiar character*, such, in a word, as arise from malaria or marsh miasm.

Confinement within the walls of an hospital is a powerfully predisposing cause to some, and this hospital stands in one of the malaria districts, to the influence of which its inmates must be occasionally exposed in passing to and from the hospital. I might assume, with as much show of truth, that this theatre is a focus of contagion, and might apparently prove it, by saying that many of my pupils, far more than the proportion of the inmates of the Fever Hospital, are attacked by typhus; but the fact is, that many of my pupils are broken up by hard study; and lodging in one of the malaria districts, the Borough, they become predisposed, and being exposed to its influence, they are attacked. But though their friends wait upon them affectionately, as nurses, I have never known any of them receive the disorder from the sick. Upon the whole, then, though I would not take upon myself to deny, in the present stage of the inquiry, the possibility of typhus being contagious, yet I have become more and more sceptical on the subject, the more minutely I have inquired into facts. Many men, it is true, make confident declarations, and say that typhus has spread from such and such a family as from a focus; but wherever I have had an opportunity of investigating the matter on the spot referred to, it has happened, either that the evidences of malaria were distinct, or that the drains were in such an imperfect state as to produce a local taint or contamination of air.

What formerly deceived me, and what still deceives many persons is this, that one, two, or more individuals may be attacked in the same house. But if one case arise from malaria, why not another and another? And where this is the case, generally speaking, we have grounds for inferring that malaria was the primary source, because, on minute examination of the testimony, it will be found, that some cases in the commencement assumed an intermittent or a remittent character.

The doctrine of contagion has been productive of one great practical evil in London and elsewhere. It has withdrawn the

attention of the profession, of the public, and even of the government, from the consideration of its primary source, namely, malaria, and has led them to trust to fever hospitals as means of prevention. But if my observations be correct, fever hospitals are of little or no utility in a preventive point of view, especially those which receive patients in the last stage. Indeed typhus obeys moral and physical laws to which the governors of such establishments do not at all advert, and how can we expect them to be useful in a preventive point of view? So certain am I in the truth of the doctrine of malaria, and a local taint or contamination of air, that I believe, with the aid of the Legislature, I could go far to annihilate typhus fever in the British metropolis, where many substantial improvements might be made in reference to this subject.

The doctrine of contagion is so influential, so pernicious in its unqualified application, that it ought to be sifted to the very bottom. By alarming the healthy, it powerfully predisposes them to the operation of malaria and other subtile agencies; it renders the attendants often so selfish, that they sacrifice the sick by sending them to hospitals at so late a stage that the fatigue of the removal destroys all reasonable hope of recovery; it alarms and debilitates the sick themselves, and in that way often destroys them through its mental irritation and depression. It has endangered the welfare of whole cities, as of Alicant, where military lines were drawn round, so that the inhabitants could not leave their homes, but were compelled to breathe the local taint or contamination of the atmosphere there. Above all, let me advise you, as you value your own approbation, the health and lives of the public, and the advancement of your profession,—above all, let me advise you to examine into the question through facts, uninfluenced by any prejudice towards others, or by any partiality to myself personally.

LECTURE XXVII.

TYPHUS FEVER CONTINUED.

TYPHUS fever, arising from malaria, assumes three different characters, and if I were to speak from my own observation, I should therefore say, that there is an intermittent typhus, a remittent typhus, and a continued typhus, in advertence to the remote cause or occasion ; but to prevent the confusion which might arise from the adoption of a new nomenclature, I shall call the first form *intermittent fever ;* the second form, *remittent fever ;* and the third form, *typhus fever*, as this is more accordant to the common phraseology ; only let it be distinctly understood, that I consider these as modifications of one and the same affection, which arise from the same cause, and which pass and repass into each other, the intermittent into the remittent form, the remittent into the continued ; and, again, the continued into the remittent, the remittent into the intermittent, as I have repeatedly seen.

INTERMITTENT FEVER.

The first form of typhus is that usually called *intermittent fever*, or *ague*, which is distinguished by its having three successive stages, namely, a cold stage, a hot stage, and a sweating stage. In the first, or *cold stage*, the surface of the body becomes universally cold and shrivelled, or rather contracted and drawn together like goose skin ; the patient generally shivers, the teeth chatter, and he complains of uneasiness, more or less, in the epigastrium or back ; his breathing is oppressed, his pulse small and weak, and sometimes he is affected by nausea, retching, or vomiting. He huddles, himself, as it were, together, creeps towards the fire, or wishes for additional covering, and feels a great deal of languor and lassitude. The duration of this cold stage is very various, sometimes continuing a quarter, a half, or three quarters of an hour, and sometimes, even longer ; it terminates in what is called the hot stage, when the skin becomes hotter and drier than natural, the pulse strong, the tongue furred, the cheeks flushed, the eyes bright, and the patient generally

complains of some uneasiness in his head. This stage, like the cold one, varies in its duration, sometimes continuing for one, two, three, or four hours, and in like manner passes away and is followed by another, namely, the *sweating stage*. The patient begins to perspire first about his head, then on his breast, and lastly over the trunk and whole body. After which, the perspiration ceasing in one, two, three, or four hours, the pulse and heat falling to the natural standard, the patient seems as well as before, except that he is a little paler, that his tongue is slightly furred, that he is somewhat sallower, has a somewhat feebler pulse, and a slight appearance of debility. The peculiarity of the intermittent fever, or ague, is this : there is a succession of the cold, hot, and sweating stages, which, after an intermission or absence of fever, return at certain intervals, by which is meant, the time occupied from the commencement of one cold stage to the commencement of the next cold stage. Where the interval is twenty-four hours, the ague is called a *quotidian ;* the patient, say, being seized with a shivering this morning, he will be seized at the same time to-morrow. If the interval be forty-eight hours, then it is called a *tertian* ague ; if the interval be seventy-two hours, it is called a *quartan* ague. It is stated, in systematic works, that the shivering fit of the quotidian occurs in the forenoon, of the tertian at noon, and of the quartan in the afternoon. This is certainly sometimes the case, but the period is very irregular, and the only distinction is that of the cold, hot, and sweating stages recurring once in the twenty-four, forty-eight, or seventy-two hours. Each of these is followed by what is called an intermission, by which is meant, that portion of time which intervenes between the termination of the sweating stage of the one paroxysm to the commencement of the cold stage of the next; in a word, it is that portion of time in which there is an absence of the fever. The internal pathology of ague is that of *simple* fever. There is first the stage of depression, or the cold stage ; secondly, the stage of excitement, or the hot stage ; and thirdly, the stage of collapse, or sweating stage. In the first, the patient labours under a slight degree of venous congestion, which is followed by re-action, forming the second, in which

the blood is so equally distributed throughout the body that no inflammation takes place, and the excitement is terminated by the sweating stage, without the occurrence of inflammation, all the organs of the body having been excited, but none inflamed; that is to say, intermittent fever exists without the occurrence of *acute* or *sub-acute* inflammation, for, as far as I have observed, if acute or sub-acute inflammation arise during the excitement of the hot stage, the fever then changes its type, and becomes remittent or continued; but the slow supervention and continuance of chronic inflammation is not incompitable with the intermittent form of fever.

TREATMENT OF INTERMITTENT FEVER.

With respect to the treatment, it is generally very simple. If called to a patient whilst in the cold stage, the object is to remove that, and induce the hot stage, which is best effected by the use of the warm air bath, of a full dose of opium with a little brandy, and warm drinks. Where the air bath is not at hand, lay the patient between warm blankets, put bottles of warm water to the feet, and a bladder of warm water to the pit of the stomach. If consulted in the hot stage, you then must reverse this treatment: cover the patient but slightly, sponge the skin with tepid water, give an aperient, a little calomel with rhubarb, followed up by cold-drawn castor oil, and cooling drinks may be then allowed; but when the sweating stage commences, the patient must be supplied with tepid bland liquids, and when that stage has ceased, the skin should be wiped dry, the personal linen and the sheets of the bed should also be changed. But supposing that you are called before the commencement of the cold stage, say about half an hour before the return of the next cold stage, the best thing you can do then is to give an emetic, and after its operation a full opiate, the combined influence of which often prevents the return of the cold stage. But we will next suppose that you see a patient, for the first time, at the conclusion of the sweating stage, what then must be done? Simply exhibit about one grain of calomel with about three grains of rhubarb at night, and one or two drachms of cold-drawn castor oil on the following morning;

but during the intermission, give gr. v. of the sulphate of quinine, thrice before the expected period of the return of the cold stage. If the bowels be kept regular by the mild measures already mentioned—if the patient remain at rest, and if the diet be spare and plain, the sulphate of quinine will always succeed; at least, I have used it in upwards of *forty cases*, and never knew it to fail, except in a single instance, where a protracted ague was combined with an organic affection of the liver. An unexpected shock given to the nervous system, by good or bad news, will sometimes remove ague; and it is well known that, on similar principles, ague is often cured among the poor by the pretended efficacy of charms, which act powerfully on uninformed minds; and hence, in ancient times of ignorance, most physicians were among the greatest humbugs in the world; but now, the general character of the medical profession is distinguished by honourable bearing, by that simplicity and purity which constitute the true —the only dignity of medical character.

With the aid of the quinine, there is no occasion to give arsenic, but if you should ever use it, do so very cautiously, beginning with gtt. iij. of the liquor arsenicalis three times in the day, and very gradually increased. It should always be given after a slight meal, never on an empty stomach, for then it sometimes produces great irritation. But I may remark here, that I have cured several cases of ague without bark or arsenic at all, merely by calomel purges, by rest in bed, and a bland diet; but the cure is rapidly accomplished if, to this plan, you unite the employment of the quinine. Take care, however, not to continue the calomel too long, lest you affect the mouth. When the return of the paroxysm has been prevented, keep the patient quiet for some time afterwards. It often happens, however, especially in London where individuals are predisposed to inflammation, that during the stage of excitement of an intermittent, that inflammation does arise, and then the intermittent fever becomes remittent or continued, according to the degree or extent of that inflammation. Shakspeare, not only one of the most accurate but extensive observers of nature, seems to have been fully aware, that an intermittent form of fever passed into a

continued form with all those symptoms attendant upon the latter, which we now appropriate to typhus, for he makes Mrs. Quickly describe the last illness of Sir John Falstaff as a quotidian tertian at the commencement, what we now call a double tertian, winding up as a continued fever of the typhus kind, the symptoms of which are most beautifully and correctly enumerated, indeed with all that colouring of truth which belonged so peculiarly to that great painter of human nature.

But though the remittent may arise out of the intermittent, yet it sometimes occurs as an original form of typhus arising from malaria, that form which shall be next described.

THE REMITTENT FEVER.

The remittent fever, as I have just stated, sometimes arises out of the intermittent, and at other times it appears, from the beginning, under its true characters. Now what are the *characters* of the remittent fever? In the first place, the cold stage is absent. The patient grows hot most frequently about the afternoon or evening; the heat continues to increase generally for several hours afterwards, the pulse being quick, the face flushed, and the eyes bright, though they always have a heavy unintellectual expression. Usually about four, six, or eight o'clock in the morning, the fever abates, and entirely leaves the patient for four or six hours. In that remission, there is either a moist warmth of the skin, or a perfectly cool skin without moisture; the tongue being then moist, but having a fur of a dirty white or yellowish colour. His pulse, compared with that in the febrile paroxysm, is not only many beats less, but is much softer, and the patient feels altogether more comfortable, except in those cases where an excessive collapse follows the hot stage. In this remittent form, the brain or its membranes, the bronchial or intestinal lining, are all more or less affected. The *treatment* of this remittent form of fever is, like that of intermittent, by no means complicated. Give the patient from about a grain and half of calomel, with three or four of rhubarb, and on the following morning administer about one, two, or three drachms of cold-drawn castor oil; let him have rest in bed, and

adopt a farinaceous diet; surround him with a fresh atmosphere; do all these thing, I say, properly, and he will almost invariably recover. But if he should complain of aching in the head, a few leeches may be applied to the temples; if there be any uneasiness on pressure made over the stomach or intestines, and if the tongue be red at the tip and edges, then let leeches be applied cautiously to the epigastrium or abdomen, till the pain on pressure be removed. Six or eight leeches, repeated once or twice, will generally be sufficient to remove, with the other means, that low degree of inflammation which is so apt to exist on the mucous lining of the small bowels. If the remissions be distinct, if the skin be warm and moist, or cool without moisture, if the pulse be soft and slower, and if the surface of the tongue be moist, then give the sulphate of quinine in small doses, two or three grains every hour, while the remission lasts. This not unfrequently arrests the fever at once, or mitigates it remarkably. Yet always narrowly watch its effects, for if it increase fever or create pain, it ought to be withdrawn. Before I knew the value of quinine, I gave an infusion or decoction of bark in such cases, in which the powder almost always does harm, by irritating the mucous membrane of the stomach or intestines. In the remittent form of fever, some symptoms of inflammation exist, yet in a slight degree, as not to preclude the use of the quinine infusion, or decoction, provided the remissions be distinct.

There are some cases of remittent fever which require the use of wine The patient, for example, is seized by an excessively hot stage, which occurs in the evening, and which continues through the night; suddenly in the morning, it leaves him with a pallid face, a sunk eye, a blueish lip, a weak respiration, a cold skin, and a feeble, nay, thready pulse. If the patient be not supported by wine under such circumstances, he sinks and dies with great rapidity, so overwhelming is the stage of collapse. While the collapse continues, you must keep the patient flat, you must lay him between warm clean blankets, apply bottles filled with hot water to the feet, bladders of the same to the epigastrium; you must tuck the clothes closely under the chin; you must admit plenty of fresh air, and give wine moderately till the

pulse rise, and the skin become warm. One example of the utility of this practice occurred in the Borough about two years ago; a pupil had typhus under a continued form, and his sister under the remittent form. She had been ill several days, and when I saw her, she was on the point of expiring, in that stage of collapse or exhaustion which has been described. I gave her wine repeatedly, till the pulse became expanded and the skin warm, and it certainly saved her life. The removal of the collapse is the thing to be accomplished; that being done, do not continue the wine, lest you give rise to re-action of a febrile kind. Some years ago, when I was physician to the Fever Hospital, a man who had had the remittent form was brought in apparently expiring, his skin cold, his pulse faltering, and even failing, his face ghastly pale, his breathing weak, short, and every now and then interrupted by what the nurses call the dead rattles. Some wine was poured down his throat, he took bark afterwards, and recovered. Never, therefore, give up any patient as utterly hopeless.

CONTINUED TYPHUS.

The remittent form of typhus fever often passes into the continued form; but the continued form of typhus commences originally as such in many cases. When the continued form of typhus commences as such, it usually begins in one of three modes; in each the patient generally has a cold stage, sometimes slight, but sometimes as severe as in the intermittent form of the fever. That passing away, in the first continued form the skin becomes excessively hot and dry, the pulse round and resisting; the tongue whitish or yellowish, but moist; the face flushed; the eye bright and ferrety; the respiration hurried, and the brain or membranes are so much affected as to indicate an acute inflammation there, if no other part be similarly disturbed. This first continued form commences as a most ardent fever, and this is the form which is seldom met with except in young and robust subjects. The symptoms before specified, go on for five or six days, if they do not terminate fatally before that time, and then the fever undergoes, gradually or suddenly, a remarkable change. The heat begins to fall, the pulse becomes

comparatively soft, and compressible, the lip and cheek assume a dusky appearance, the respiration becomes weaker, and the tongue grows dry, and is covered with a brown varnish. The principal cause of this change is the occurrence of that special bronchial affection with which typhus is invariably attended.

The *second* form of the continued typhus is *intermediate*. The fever is less ardently developed, the skin is not so hot, the pulse is not so round and resisting, and the head is less intensely affected. The tongue for several days remains moist, and is coated with a whitish or yellowish fur on the centre, but its tip generally redder than natural, and an accurate observer might detect some traces of irritation of the mucous lining of the bronchia, there being usually some cough occasionally, and the other signs. This form, however, also undergoes a change, generally in six or eight days; the heat begins to fall, the pulse becomes softer and more compressible, the tongue is at length varnished with a brownish fur, and the patient's strength is much diminished, for he lies on his back, and pants or heaves when he answers questions.

The third form is the *extreme*. Now what takes place in five, six, or eight days in the first and second forms just described, takes place at the very onset of the third form. The special bronchial affection is developed almost immediately, the tongue growing glazed and brown in twenty-four hours after the attack; the pulse soft and compressible, the voice weak, the position sunk, the nervous and muscular power prostrate. I suppose, this is what the older writers called typhus gravior; but I confess that I do not know what is meant by the terms typhus mitior and typhus gravior, except that these words imply a difference in degree, having no allusion to that internal pathology which is the cause of all the varied symptoms.

These are the three forms which continued typhus fever assumes under ordinary circumstances; and as there is hardly any affection which makes a stronger general and local impression upon the system, it is necessary, before proceeding further, to give an insight into its morbid anatomy, for without a knowledge of that, you will never be able to comprehend any thing like its

true pathology. If you were to consult most of our nosological or systematic works, you would be informed that the patients died from typhus. No disorder leaves more extensive traces after death than typhus fever.

MORBID ANATOMY.

If you examine the body after the fatal termination of typhus, you will find the following appearances where the affection has run its accustomed course. The pia mater is considerably surcharged with blood, the arachnoid milky or opaque in some places, and an effusion of a serous fluid between them, and sometimes spots of lymph, while the substance of the brain itself, when cut, exhibits more bloody points than natural. Hence we infer, that inflammation of the membranes before named and of the brain had existed during life. These appearances within the cranium are very constant. The spinal cord, or its membranes, have been found in a similar state in all those cases where I have seen it laid open, but the difficulty of doing this has prevented me from making very many such examinations. The bronchial lining is always very much injected with dark blood, and besmeared by a sticky secretion or varnish, and if you take a sponge and wash that sticky secretion off, the bronchial lining becomes of a brighter red, showing that the air then comes freely in contact with the blood, which it had not done before. This secretion is generally less copious than that of common bronchitis, but more tenacious, and therefore more effectually excludes the air. If you extend your examination further, the liver will often be found gorged with black blood, especially where calomel had not been given, the superior and inferior mesenteric, with the splenic veins, being also loaded with blood. Sometimes the liver exhibits vestiges of previous inflammation, but that is rare. The lower part of the mucous lining of the ilium is always inflamed, and generally ulcerated, where typhus has terminated after or about the third week. Occasionally the mucous membrane of the stomach is red, thick, and pulpy, and also that of the colon. Some of the mesenteric glands are red and swollen. The affection of the pia mater, arachnoid, and

brain, that of the bronchia, and of the ilium are constant, and if to these you unite the dry husky state of the skin, which usually attends protracted typhus, you have at once a pathological view of those conditions which require attention in practice. Besides, these appearances explain all the symptoms of continued typhus. The inflammation of the membranes of the brain, and of the brain itself, is marked by all those signs which I before enumerated, and I might make the same remark in reference to the affection of the spinal cord, of the bronchial lining, and of the lining of the ilium. The diagnosis of continued typhus lies, first, in the combination of the symptoms, namely, that combination which indicates the co-existence of the affection of the brain, bronchial and intestinal lining, together with a disordered condition of the skin, and usually a vitiated secretion of bile; and, secondly, the diagnosis lies in that remarkable change which sooner or later occurs in that perfect developement of the special bronchial affection attended by a brownish varnished tongue, sordes about the teeth, a peculiar sub-acute empyreumatic smell, a dusky lip, and either a dusky cheek, or a livor mixed with pallidity; while the pulse grows soft, the respiration weak, generally with some cough, the heat becomes more subdued on the surface, the patient lies upon the back, becomes more muddled in the brain as the disorder advances, and in fatal cases, at last insensible. The special bronchial affection exercises a great influence by preventing the common changes of the blood, which is found darker than natural; no typhoid, or typhous fever of the continued form, ever existing without this bronchial affection, which is usually insi dious at first, but becomes more and more marked in the progress of the disorder. It would, however, appear, that some morbid conditions of the blood must exist from the beginning, else why in all cases should the brain, bronchial and intestinal lining be uniformly affected? If other structures be found inflamed, it may be considered rather an accidental than a constant occurrence.

The first form of continued typhus sometimes terminates fatally in a few days, so does the third, but the second generally

runs a course of about three weeks, which may be considered the most common period for continued typhus, when not stopped at the onset; but it ought to be recollected, that whatever may be done in many cases, this affection goes on, having a sort of determinate duration, being, in fact, what the old nurses so emphatically call a one-and-twenty-day fever. Sometimes, it must be confessed, this disorder is less or more protracted, but, unquestionably, the above named is the most common period of its duration. Having made these observations, I shall advert to the

TREATMENT OF CONTINUED TYPHUS.

There is one thing very dreadful in the treatment laid down by the writers of nosological systems, which is this—that they prescribe merely for a name, such as for scarletina, measles, hooping cough; affections which they describe under one uniform character, as if they were the same under all circumstances, while the pathology is so purely symptomatical that we have little or no insight into that anatomical pathology which is so truly valuable. In the first form, nothing can save the patient's life but decided bleeding at the beginning; but be sure to recognise that form. In it the skin is very hot and dry, the pulse rapid, and hard as a cord, the tongue moist, but furred, and the brain actively inflamed. Last year, a solicitor, a friend of one of my pupils, was attacked in this manner, and in three days we were obliged to bleed him to the amount of 108 ounces of blood before the violence of the phrenitis was removed. This is the largest quantity which I have ever ordered to be drawn in genuine typhus. In this particular case, it ran a mild course afterwards. In another similar instance, about fifty ounces of blood proved sufficient, and sometimes less will reduce the cerebral inflammation, provided other auxiliaries be properly employed. The head should be elevated, the hairy scalp shaved, and cold applied to the whole surface of the head, so long as it remains hotter than natural. The bowels should be daily opened by calomel and rhubarb, assisted by cold-drawn castor oil. The apartment should be kept cool and rather dark, and the diet should be excessively spare as long as the urgency of

the fever lasts. The period is very brief in which venesection can be beneficially used in the first form of continued typhus; only, I repeat, while the skin remains intensely hot, while the pulse remains expanded and hard, while the tongue is moist, and while the brain or some other part is acutely inflamed at the same time. These symptoms must guide you, and be sure therefore to remember them perfectly, otherwise you may commit the most serious mistakes. When the special bronchial affection has once fairly set in, when the tongue has become dry and glazed, the pulse soft and compressible, the heat less high on the surface, the breathing so weak that the patient pants and heaves when he answers questions, then be extremely cautious how you abstract blood, even locally, never, in short, do it in that mode without attentively watching its effects, for if you bleed the patient at that period too repeatedly by leeches, the consequences may be mortal. Mild aperients, fresh air, quietude, and a bland diet, with cooling drinks, are the measures upon which, at that time, you must mainly rely.

For the middle and advanced stages of most of the ordinary cases of typhus fever, mild calomel purges may be almost considered a specific, where no organic derangement has taken place. But what treatment is to be adopted in the second or intermediate form of continued typhus? Early and moderate venesection will generally suffice to lessen the cerebral affection, so that the disorder will afterwards yield to mild means. This is the form which has so repeatedly attacked my pupils. One or two moderate bleedings from the arm, as many present know very well, have generally answered an excellent purpose, before the tongue became dry and glazed; and after that period, cautious leeching, where the pain in the head, or where pain on pressure over the epigastrium or belly demanded such a procedure, the subsequent practice being very simple and gentle. When the bronchial affection once exists, with a glazed tongue, the treatment cannot be too gentle, except sub-acute inflammation require a deviation, and then even that should be discreetly made.

In the third form of continued typhus, that which sets in with

the bronchial affection, the pulse is soft, the skin is not very hot, the tongue is dry, brown, and glazed, the voice and respiration weak, the muscular power prostrate, and the lips dusky. In all such cases, avoid general blood-letting. A servant was seized with this form of typhus, about the same time as the solicitor whose case I before related, and though in her the brain, the bronchial lining, the mucous membrane of the stomach, and of the ilium, were all inflamed, yet I am sure that the loss of eight ounces of blood would have destroyed her; yet, you know, the solicitor lost 108 in all, with great advantage. But the circumstances were entirely different, the one being not only an acute, but an active inflammation, the other being not only a sub-acute, but a passive inflammation; passive, because the heart's action was subdued by the influence of a special bronchitis, by the circulation of a dark blood on the arterial side, as before explained. This girl recovered by cautious leeching, with mild calomel purges, aided by a fresh atmosphere, lemon juice, and light diet. Cases of this kind are sometimes insidiously announced, persons continuing to go about for some days, with a pale countenance, a dropping of the eye-lids, a somewhat glassy eye, yet a dull unintellectual expression, a furred tongue, an uneasy head, and a languid look and manner, with loss of appetite, and wakefulness or disturbed sleep. If they continue to go about too long, they frequently sink at once, and sometimes die rapidly. Always enjoin rest in the horizontal posture as soon as possible. It saves the strength, nay it often saves the life of the patient. In this third form, at the commencement, when the patient complains of constant pain in the head, or when he has a red tipt tongue, with pain on pressure over the stomach or bowels, a few leeches may often be applied with advantage to the temples or abdomen; but remain with the patient that you may watch their effects, and be sure to restrain the bleeding from the punctures before you take your leave. If the pulse sink, and the respiration becomes anxious, you may be certain that the loss of blood cannot be further sustained at that time; if you have any doubt on the subject, always lean to the side of caution in such cases, for in them

more lives are lost by doing too much than the contrary, in the way of medical management. In these and other delicate cases, it is important to ascertain the effects of an erect position. When patients, for instance, complain of dimness of sight, giddiness, sickness, or faintness, and where they turn pale and labour in the breathing, when they get up to the night-chair, or as they sit upon it, never allow them to rise again, but let them pass their stools or urine in the recumbent position, for where the erect one produces the symptoms just mentioned, patients are apt to lapse into syncope if they sit long; and fainting then, there is sometimes scarcely an appreciable interval between the syncope and death:—if the patient should recover from that syncope, it generally gives such a shock as to lead to serious consequences in the last stage of exhaustion. The accumulation of offensive fæces is very extraordinary in typhus, and requires to be dislodged daily in most cases; but from the time that the tongue assumes the glazed and brown varnish, the evacuation should be duly regulated according to the patient's powers. I have seen many patients lost from excessive purging in the advanced stage of typhus. If ever you observe blood in the stools, you should always omit the aperients, which, by irritating the mucous membrane, are then hazardous. Do not forget what I formerly stated in regard to intestinal hæmorrhage, since it is by no means uncommon in typhus, and unless patients be rightly managed then, they have but a slender chance; whereas, if you omit the aperients, keep them recumbent, adopt a light diet, and surround them with a fresh atmosphere, the majority of examples will do well. When jactitation occurs, when the patient is sleepless, when he constantly changes his place and position, opium is sometimes useful even where the tongue is parched and glazed and brown. But unless you have this conjunction of symptoms, avoid its exhibition in typhus. In one recent work, the pharmacologia of Dr. PARIS, small and repeated doses of opium are recommended in typhoid or typhous fevers; but like many of the other directions respecting the practical application of medicines in that work, this is erroneous, and, indeed, so very dangerous, that if adopted it would generally prove fatal.

In every form of continued typhus, bark is prejudicial, and I protest against its exhibition. Not only bark, but wine is still recommended by many authorities in continued typhus; but in general it does a great deal of harm, increasing the heart's action, and aggravating all those local affections with which typhus is complicated. Yet to this observation there are some remarkable exceptions. In the advanced stage of typhus fever, when the pulse becomes feeble, the skin cool, the respiration embarrassed from debility, and especially when the patient is at the same time restless, a little wine given now and then is extremely useful in alleviating or removing some or all of the forementioned urgent symptoms. When a stimulus is necessary, none is so good as wine. It is at once grateful and refreshing. Whereas most of our medicated stimuli are disagreeable to the taste, and not unfrequently nauseate the stomach, and in that way rather depress than sustain the powers of life. In all critical cases, it is of great consequence not to offend the stomach, and hence it happens, that life is often lost from the too frequent repetitions of certain drugs. It is a long time before a man learns to be simple in his prescriptions. At all events when you trust to wine, avoid the mixture of medicines. As, however, the first exhibition of wine in the last stage of continued typhus is always an experiment, be sure to make it with becoming care, so that if you do no good by it, you may avoid any material mischief. Give it at first in tea or table spoonfuls till you ascertain its effects. If the skin become hotter, the tongue drier, the pulse quicker, the breathing more hurried, and if the patient become either more oppressed or more restless, wine does him harm; on the contrary, if the skin become only of a genial warmth, the tongue moister, the pulse slower and stronger, the respiration deeper and more tranquil, and if the patient become less oppressed or more tranquil, the wine does good. But, generally speaking, if you pursue a right plan in other respects, you will seldom have occasion to prescribe wine in continued typhus.

Fresh air is the best cordial in all cases of fever where the tongue is glazed and brown. It is then, indeed, the most vital food. The sticky varnish on the bronchial passages excludes the

air, to a certain extent, from coming in contact with the blood when propelled from the right side of the heart, and presented, if I may use such a word, to the atmosphere which we inspire. By consequence the blood is not sufficiently decarbonized or oxygenated; a sort of venous blood is returned to the left side of the heart, which, circulating through the system, muddles the brain and masks the muscular power in continued typhus, which makes that word so expressive of its nature, as if it were a smoky or smothered fire in the system. This special bronchitis is the reason why patients require a constant supply of fresh air from without, but in the last stage, you must be sure to keep them properly covered, that the surface may not be chilled. In the earlier stages, however, when the heat is higher than natural, the body should be very lightly covered, tepid ablutions should be occasionally used to cool the surface, and the temperature of the apartment should never be higher than 60 degrees, if practicable. An old gentleman had an attack of typhus; it put on a most malignant character; his mouth was black and his skin spotted, sprinkled with purple petechiæ. I placed the bed diagonally in the room, so that a current of fresh air passed directly over the patient through an open door and two open windows, a nurse having been placed constantly at the bed-side to regulate the covering, so as to keep the surface of a natural warmth. Under this supply of air he recruited apace, and I have seen several examples of a similar nature, where the same procedure was equally successful.

When the tongue is brown and baked, diluted lemon juice is often very beneficial, provided it does not irritate the bowels so as to occasion uneasiness, or provoke watery evacuations. Next to that in efficacy, I would rank the solution of chlorine, or what is commonly called oxymuriatic acid, a drachm of which, or a drachm and a half, may be given, largely diluted with pure water, in the course of twenty-four hours, observing the same limitations as prescribed for the employment of lemon. When the latter is given in the common drink, you should not allow any other fruits to be infused in the water, but you should be especially mindful not to permit the patient to eat any fruit which

contains skin, seeds, or fibres, since all these are very liable to create irritation on the mucous membrane of the stomach or intestines. You must not only pursue a similar simplicity with respect to diet, which while the skin is hotter than natural should be farinaceous, but you ought to adopt a like plan in regard to medical prescriptions, even avoiding saline draughts or mixtures, when they produce watery stools.

On some occasions, I have known a constant nausea maintained by too large a supply of farinaceous and other food, the stomach and bowels being distended by flatus. In these cases, the substitution of a little chicken tea, morning, noon, and evening, with a few grains of carbonate of soda in a little almond milk often has an excellent effect. The truth is, that many patients are worried to death in the last stage of typhus by being crammed too frequently with food or physic, or by being so incessantly disturbed with the mistaken attentions of their friends, that the stomach is allowed no respite—the brain no repose in sleep. In many of such cases, we can support the strength best not so much by positive as by negative measures—not so much by administering diets and medicine as by the avoidance of all unnecessary demands upon the strength. Learn rightly to appreciate these seemingly little things, if you wish to practise successfully in the advanced stages of febrile disorders, particularly where they have proceeded from peculiar causes.

Continued typhus once fairly formed has a determinate duration under its most frequent or second form; and the medical man who attempts to stop it by the employment of active measures day after day will lose a large majority of his patients; while another, who confines the active treatment to the first few days of the attack, in order to moderate its character then, and who treats it very mildly afterwards, will save a larger majority of his patients.

It frequently happens, in the last stage of continued typhus, that the urine is retained, especially when the brain is much affected, or when the bowels have been neglected. In such instances, the patient either lies upon his back and moans incessantly, or he is in great general distress, and is liable to attacks

of coldness; and in such cases, there is a tumour above the pubis, and the linen is mostly wet from the dribbling of the urine. The life of the patient may be often saved by drawing off the water by a catheter, once or twice a day.

PROGNOSIS.

Typhus fever is the least dangerous in children; in them it generally puts on a mild continued form, and what is remarkable, that continued form, in them, shall sometimes be unattended by any sign of inflammation, a circumstance which is not observable when it occurs in the adult, and which, perhaps, can only be explained by the greater degree of sensitiveness in the nervous system of children. In young men, typhus is seldom fatal, if rightly managed from the beginning. I have attended many medical pupils in the Borough for this affection, and they all recovered, though in two examples, from over-cramming in convalescence, relapses took place and proved mortal. The body is so debilitated when typhus runs its usual course of three weeks, that the greatest care is necessary till the strength be confirmed. Indeed, I have seen, upon the whole, more death from relapses than from original attacks. The average of mortality in persons between 25 and 40 years of age, is about one in thirty; but of course I confine this remark to cases treated properly from the very commencement, for the ratio of mortality in my practice, when called in at the advanced stage of continued typhus, has ranged from about one in six to one in twelve, for some years past. But under the ordinary modes of management, under the extreme evacuations used by many young practitioners, and the extreme stimulation used by many old practitioners, the mortality is much larger in the advanced stage of continued typhus. The anxiety of practitioners, and the anxiety of attendants, too frequently prompts them to do more than is needful at such a period; but let me once more advise you to remove opposing circumstances, and to avoid the mischief which results from the *nimia diligentia* of merely medical prescription. The state of the mind, it ought to have been observed, has great influence upon the issue of typhus. If the attack come on when the mind

is suffering from any great calamity, it is most frequently fatal. For the most part, on this principle, it is more dangerous among people of cultivated than uncultivated minds, and also among parents than servants. It is of the utmost consequence, in conducting the treatment, not only to conceal every circumstance from the patient which might disturb the mind, but to administer, confidently and consolingly, the daily assurance that the case is going on well, whatever may be the prognosis given to the friends, whose conduct should be equally encouraging to the sick. Typhus is very dangerous to old and debilitated persons, for in them the bronchial affection is apt to be so severe as generally to endanger their lives, particularly if the case be neglected or mismanaged in the commencement or earlier stage.

Concerning that form of continued typhoid, or typhous fever, which arises not only from the putrid effluvia of drains, or from the contaminated air of hospital wards, but also from the introduction of some putrescent matter, as in the case of puncture from dissection, the treatment requires to be regulated by the same plans as already laid down ; but the locally attendant affection of puncture must be soothed by an emollient poultice in the first instance, and the arm laid in an easy position, which best favours the return of venous blood ; and if in the progress of that affection any matter should form there or elsewhere, it must be let out by a free incision, especially if there be any tension about the part. As in this typhoid or typhous form of fever the bronchial affection generally sets in at an early period, be on your guard against too free evacuations, which I know from experience are then exceedingly injurious.

The intermittent, remittent, and continued forms of typhus, which pass and repass into each other, may be considered as the regular effects of malaria, or marsh miasm, which exists in various situations ; but this subtile agent sometimes produces attacks of congestive fever, in which the patient is at once stricken down, and, in fatal cases, dies either without any re-action at all, or with an imperfect one, as before particularly described, when I considered the various modifications of common congestive fever. Occasionally, in this country, malaria gives rise to the symptoms

which constitute the cholera morbus of nosologists, and then, when patients do not sink under the first shock, a fever is developed with the peculiar characters of typhus.

When I had satisfactorily ascertained that malaria was the primary source of what is commonly called typhus fever, I was led to reflect on the phenomena of what have been usually designated the yellow fever of the West Indies and the pestis of the East, and from an impartial consideration of the facts which have fallen under my own observation, and from those which have been communicated to me, I have every reason to believe, that yellow fever, pestis, and typhus fever arise from the same source, and, are, in truth, modifications of one and the same disorder, as I shall now endeavour to show their probable identity by a detail of facts.

The vagueness of medical language is well known. The science abounds with abstract words, which having never been distinctly defined, different meanings are attached to them by different individuals. The term *yellow fever* is one of these, and, in fact it has been applied, not to one affection, but to various affections. It appears to me, that no less than three affections have been comprehended under this term. If in a hot climate a patient be seized by common inflammation of the liver, in its progress the skin is liable to become yellow, and from that symptom it has, by some, been called the "yellow fever." If a number of Europeans, for the first time, visit the West Indies, many of them, on their arrival, are apt to be attacked by an ardent form of fever, which has been ably described by Mr. DICKENSON under the name of "the inflammatory endemic of the West Indies." In the progress of this fever, the skin not unfrequently becomes yellow, and therefore it has also been called the yellow fever, and formerly it was thought to be contagious, from the circumstance of many persons being attacked, successively or together, for example, on ship-board. But it has been satisfactorily proved, I think, that it arises from the high temperature operating upon *unseasoned* constitutions, and the circumstance of many persons being attacked about the same time or in succession, depends, first, upon their predisposition, and, secondly, upon their being exposed to

the same exciting cause, namely, an elevated temperature. Persons seasoned to the climate escape this kind of fever. To a mind deeply imbued with the doctrine of contagion, it is seen everywhere; but recollect, it has been well observed, that what appear to be *facts* are often only *opinions*—ay, opinions, by which the facts are discoloured or concealed. Lastly, what has been called yellow fever arises from malaria or marsh miasm; it has intermittent, remittent, and continued characters, passing or repassing into each other. It is to the last-mentioned form that I would appropriate the term yellow fever in this Lecture. Now yellow fever, under this signification, sometimes occurs in this country. In 1814 I saw several cases, some of which were fatal, and the patients had the black vomit, and died with skin as yellow as gold. In 1818, I saw also several cases in which the skin became yellow, and in which the black vomit appeared, and since that time I have occasionally met with cases where the skin has been tinged either of a saffron or a lemon hue. The saffron hue generally arises from the absorption of bile, which is then found in the urine; the lemon hue generally arises from universal relaxation, with some change probably of the blood, and then the urine is pale. An intimate and intelligent friend of mine, who resided long in the West Indies, has repeatedly traced this form of yellow fever to malaria, and has found, as I have done with respect to the typhus of this country, that it arises from the same source, that it has an intermittent, a remittent, and a continued character. Sometimes, in this form of yellow fever, the glands externally become affected in the West Indies, especially the axillary and parotid, of which I have seen many similar examples in this country, but always in bad cases.

The word *pestis* was, in ancient times, used in various senses to express, in short, the existence of any epidemic which extensively prevailed under a serious character. In the time of Prosopius, the meaning of it seems to have been first limited to that modification of fever in which bubo and carbuncle are apt to appear, and this is the sense under which it appears to have been generally employed since his time. Nevertheless some of the most experienced observers agree, that many cases of pestis occur

either without the bubo or carbuncle, being then attended by petechiæ, which seem to be slight exudations of blood, in points, under the skin. In the time of the great pestis in London, the bubo, carbuncle, or petechiæ, seem to have been regarded as diagnostic signs by the searchers. Having in bad cases of continued typhus seen the axillary and parotid glands affected, having seen ill-conditioned boils on the surface, and being aware that petechiæ were not uncommon, I began to suspect that pestis and typhus were merely modifications of each other. From this period, I examined the surface more attentively, and since then have repeatedly met with cases, always severe ones, in which the bubo and carbuncle were distinctly marked, yet I have never found that such cases were communicable, either immediately by persons, or mediately by things. Moreover pestis arises from the same source as typhus, and assumes the same forms, that is to say, when traced under all its varieties, it is intermittent, remittent, or continued. My friend Dr. De Reider, an Austrian physician of great ability, who resided many years in Turkey, transmitted to me the result of his observations there, and he found that pestis arose primarily from malaria, and that sometimes it put on the intermittent, sometimes the remittent, and sometimes the continued character, appearing and disappearing in particular spots, just as typhus fever does in this country. Another medical friend who has visited Constantinople, has come to the same conclusion as to the original cause of pestis, and has been as remarkably struck with the similitude of it and of the typhus of this climate. Upon the whole, then, these facts appear to show the probable identity of yellow fever, pestis, and typhus fever, as already defined. The same conflicting, nay, confused, testimony, exists respecting the contagious or non-contagious nature of yellow fever and pestis as of typhus fever. Whatever may hereafter be proved to be the case of the two former, by a more minute and dispassionate inquiry, than has yet been instituted, I can only repeat, that the more narrowly I investigate the facts in regard to the typhus fever of this country, even under its most aggravated aspects, the more I am inclined to doubt its contagious nature, and as to yellow fever and pestis, I am in possession of

several striking facts, communicated by veritable persons, which certainly do appear quite irreconcilable with the doctrine of contagion. But as I have determined to leave my own mind open to the free admission of future evidence, so I must again recommend you to investigate the subject, not for the sake of any favourite hypothesis, but solely for the sake of truth.

Viewing typhus fever under its most comprehensive signification, I may be permitted to say, that, by dint of industry, I have made some improvements, first, in having more distinctly exhibited its remote occasions, the knowledge of which will enable you to prevent its occurrence in many places, or stay its extension when it may appear; secondly, in having not only more minutely explored and detailed its morbid anatomy, but more clearly illustrated its internal pathology, which will enable you to perceive the various indications of treatment; and thirdly, in having fitted the remedies to the different forms and stages, which will enable you to apply an active, an intermediate, or a mild treatment, with precision. Indeed if you have fully comprehended the pathological and practical bearings of the doctrine of a congestive, simple and inflammatory variety of fever—if you have fully comprehended the modifying influence not only of common and peculiar remote occasions, but of all those other particulars to which I have repeatedly adverted, as necessary to be considered in practice, you will be at no loss, into whatever climate you may be thrown, since you will have principles to guide you—principles which, in reference to the pathology and treatment of all febrile disorders, will not pass away.

LECTURE XXVIII.

SMALL POX.

When small pox arises from casual exposure to contagion, it appears, generally speaking, in about ten or twelve days afterwards, sometimes, however, later, and sometimes earlier. I knew an instance in a female who was not attacked by variola

until nearly a month after exposure, and another instance in which it occurred in three days. When variola arises from innoculation, the system is commonly affected in about nine days. There is a state in the progress of small pox called the eruptive fever, by which is meant the fever which occurs before the appearance of the eruption, and that fever usually exists about three days, as a precursor of the affection of the skin. At this early period, you should be very cautious about giving an opinion as to the precise nature of the complaint, especially if small pox prevail in the neighbourhood. If you should be called to a patient who has a hot skin, a quick pulse, some uneasiness about his stomach, with nausea, retching, or vomiting, if the eyes be a little redder than natural, the tongue covered with a white fur, the head or back uneasy, you may generally suspect that it will turn out to be small pox, but you cannot be positive about it, and therefore do not commit yourselves by too unqualified assertions. When the eruption comes out, it appears first upon the face, neck, trunk, and then upon the upper and lower extremities. The eruption is generally finished in about three or four days from its first appearance; although VAN SWIETEN mentions that he saw a case in which the eruption was not finished till from six to seven days. That, however, depends very much upon the treatment, for if a patient be kept hot, the eruption will continue to come out for a longer time than if he be kept cool from the commencement.

The pathology of the old authors was external or symptomatic merely, and we accordingly find, in all the nosological systems, that small pox has hitherto been divided into two great leading varieties, the one called the *confluent*, the other the *distinct*, this division being simply founded upon the appearance of the eruptions. When the eruptions are so far separated from each other that they do not touch and coalesce, then it is called the distinct small pox; but when the eruptions run into each other and coalesce, then it is called the confluent small pox. But if a modern pathologist, unacquainted with the established technicalities, were to write upon the subject, he would found the distinctions, not upon the external signs, but principally upon the internal pathology, which is the most important. As, however,

the terms distinct and confluent small pox are among our medical fixtures, I shall continue to employ them, and explain under them the internal pathology of small pox.

DISTINCT SMALL POX.

There are two forms of the distinct small pox, the one of longer duration than the other. The first form is designated by the following symptoms:—When the eruptive fever has continued about three days, you may, 1st, observe small red spots appear about the face, followed by others upon the neck, trunk, and extremities, and these spots gradually increase in size. 2. In the second place, each small red spot becomes a vesicle in about three days. 3. That vesicle, distending with serum, has a central depression, a small indentation at the top, visible usually between the third and sixth day. If you were to press the head of a small pin on a vesicle raised by a blister, it would give you a very good idea of what I mean by this central depression. This is invariably present in some of the vesicles, and, I repeat, it appears from about the third to the sixth day on the upper portions of the body. When the vesicle becomes a pustule, then the indentation is lost, an opaque spot frequently occupying its place. 4. This vesicle becomes a pustule between the sixth and ninth days, being then distended, not by a serous, but by a purulent fluid; the serum having been absorbed and pus deposited, or the serum converted into pus. At this period the eruption has a pearly sort of appearance, while each pustule, instead of having any central concavity or depression, is now globular. 5. There is a red and an elevated base round every well defined pustule. Maturation succeeds on the eighth, ninth, or tenth day, and then the scabbing or incrustation; the brown or dark scaly eruption at last falling off, sometimes leaving pits. Many expedients have been resorted to in order to prevent the pitting, but the only plan is to avoid the premature separation of the scab, and that is of some importance to recollect. In the progress of the eruption, the face swells first, because the eruption is completed there first, and then, swelling of the face subsiding, the hands swell, and after the swelling has subsided there, the feet swell less or more in

their turn. During the progress of the eruption, an appearance somewhat approaching to that of a variolous pustule is seen about the mouth or fauces, and some authors have said, that they have found pustules internally, but the structure of the part does not admit of it, and they are rather aphthæ, resembling pustules. The cuticle is so modified after it reaches the lip, that it is, perhaps, a *physical impossibility*,* at least I have never seen what the Americans would call a *genuine* pustule there. It is the semblance of a pustule merely, even about the mouth or fauces. The tongue is usually covered in part with a whitish fur, and is moist as the eruption proceeds. When the eruption has come out, the fever, in the distinct small pox, either entirely leaves the patient, or is very much mitigated; it remains in a slight degree, for it is not true, as some systematics state, that the fever invariably leaves the patient as soon as the eruption comes out or is finished. The bowels are usually more constipated than natural, and when they are lax you must be upon your guard, for it is generally owing to some irritation of the mucous membrane of the upper part of the colon, or of the lowest part of the ilium. The older authors were not in the habit of qualifying any thing which they said, and men who are accustomed to speak or write very positively are apt to mislead those who do not observe with minuteness. They said, that secondary fever arising about the period of maturation, was invariably the attendant of small pox; but it is not a necessary occurrence, for I have seen many cases of distinct small pox rendered still milder by a proper treatment, in which no secondary fever appeared. It is frequently present, however, where the eruption is abundant, and the causes which appear to produce it are the following:—1. The irritation in the skin is highest about that period of maturation, and this irritation occasionally appears to contribute to the rise of secondary fever. 2. As the pustules then subside, the absorption of the variolous matter may probably be another concurring cause. 3. A third

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* *The cuticle* has been distinctly traced as far down as the cardiac orifice of the stomach, by some late French anatomists.

cause may be, and often is, the interruption to the functions of the internal mucous membranes, as well as those of the skin; and in that way the secondary fever may arise sympathetically, for whenever the functions of the skin are much disturbed, then the internal mucous membranes are liable also to become disturbed. 4. A fourth cause is sometimes an accumulation of fæces or urine, or both. This secondary fever appears to have been the universal attendant of small pox in former times, because the practitioners neglected to use aperient medicines, by which the intestines were surcharged, and the urine retained.

Now, there is another variety of the distinct small pox, which has been called the mitigated, *modified*, and also the varioloid disease, but it is merely a variety of the distinct small pox. I believe it to be so, because the premonitory symptoms are the same as attend the other or first form of the distinct small pox; 2. The eruption comes out likewise, in the same way; 3. The eruption has the central depression; 4. The pustule has a cellular structure, which is peculiar to small pox, the pustule being divided into numerous cells; 5. In the fifth place, to put the matter beyond all doubt, it gives rise also to small pox under all its modifications. What then is the peculiarity of the secondary form of distinct small pox? It is this; it stops, as it were, in the middle of its progress, on or about the fifth or sixth day, and the pustules are generally smaller and harder. The reason, I believe, why this form of variola has not been noticed as a milder epidemic variety, is partly this, that men have not examined cases sufficiently for themselves, but have given too much credit to CULLEN, the false prophet in the modern medical world. SYDENHAM does not appear to have met with this form of small pox, and, as CULLEN copied his descriptions from SYDENHAM, of course it does not form a part of that nosology, in which some look for every thing, forgetting to peruse the volume of nature.

This modified variola has been supposed to arise from the influence of vaccinia, or cow pox merely. It is not my intention to deny the modifying influence of vaccinia; but I do mean to deny, that it is the sole cause of producing this modified or milder form of the disease; and I deny it, because I have seen

several cases of this mitigated or modified small pox, or variolous disease, arise in children who had never been vaccinated at all. Three children came under my observation who were inoculated with a small pox matter; in one of these the eruption stopped on the fourth day; in the second it stopped on the sixth day; and in the third it stopped suddenly on the eighth day, when it was apparently assuming the confluent character. I could adduce many cases of the same kind, some arising from inoculation, others from casual inffection, entirely distinct from any influence of vaccinia. There is, therefore, a second and a milder form of distinct small pox, which CULLEN and his followers have not described. An important question now arises, does vaccinia really mitigate small pox? I have made many minute inquiries on this point, and they have, at least, led me to believe that it does modify, or rather mitigate, subsequent attacks of small pox. People, however, have gone so far as to say, that it does so invariably; but, speaking from the facts which have come under my observation, I should say, that I have seen some children affected with small pox, most severely, who had undergone the operation of vaccination; and I am afraid that the truth, the whole truth, has not always been told respecting the character of all the cases which have occurred after vaccination, which, notwithstanding is, in many cases, a complete preventive of small pox, where it is properly performed.

The *Confluent Small Pox* is the third form, respecting which I shall now make a few remarks.

You may generally be apprised of the disorder being likely to turn out confluent by the precursory symptoms, which set in more severely. When you find a patient complaining of pains in his head and back, the respiration being hurried and anxious, the pulse more quick and the skin more hot than natural, and the stomach more disturbed, you may suspect, from the violence of the symptoms, that the affection may put on the confluent character, and the more especially, if on examining the patient minutely, you discover a very great number of small red specks approaching each other on the surface, accompanied by considerable inflammation about the throat.

As far as the character of fever is concerned, there are two forms attendant on the confluent variety, and it is of the utmost importance to distinguish them in practice. The first form of fever is *open*, attended by an intensely hot and dry skin, by a very quick bounding pulse, by a moist tongue, excessive thirst, and great restlessness. This open, or ardent, form of fever goes on, under its highly developed type, for four, five, or six days, and then it is remarkably changed; the heat falls upon the surface of the body, the pulse becomes soft and compressible, the tongue glazed and often brownish, the breathing weak, and the face dusky; in short, the change is precisely similar to that which takes place in the first open form of typhus fever, and is owing to the same cause, viz. the developement of the bronchial affection. Now what takes place here in four, five, or six days in the open form of fever, takes place at or about the onset in the second form of fever attending small pox, for then the bronchial affection is so urgently developed as to smother or mask the fever.

In the first form, in which the fever is open, the face swells soon, and does not subside so quickly as it does in the distinct variety; the eruption goes on as usual, and the fever does not leave the patient on the appearance of the eruption, but continues, and even increases, until the bronchial affection sets in decidedly, and then the fever puts on the typhoid aspect, when the most remarkable changes are produced with respect to the heat, the pulse, the respiration, colour, and strength of the patient. If this change does not take place till the seventh or eighth day the pustules go on filling, but if the bronchial affection occurs much earlier, it arrests the eruption, for then the pustules become flatter, a change always observed with great alarm, and properly too, by poor persons, who say, "Alas!" or "Oh dear! how flat the pock has become." Petechiæ sometimes form, or spots of effused blood, which are hardly ever found in fevers where this bronchial affection is not present. Now when this bronchial affection is early and intensely developed, the patient has a dry glazed tongue, a smothered heat upon the surface, a soft compressible pulse, a weak breathing, a purple lip, a husky voice, and the pustules

never rise much, and have a dull mulberry sort of appearance at first. The open form of fever, which attends the confluent small pox first described, generally occurs in strong robust persons, whereas the other, or masked form, generally occurs in weak persons, especially among the tabid children of London, who are badly fed and clothed, and who live in close and confined situations.

CAUSES.

You must have perceived from what has been already said, that variola is a specific affection; that it arises from a peculiar cause, namely, a contagion, but how this was at first generated—how it arose *de novo*, we do not know; however, there are sufficient proofs that a contagious essence is now the only known cause. That the blood becomes tainted is unquestionable, because a secretion is given off, which being received into the body of another produces a like disorder. This condition of the blood, under given circumstances, occasions similar effects on certain structures, and in a pathological view may be considered as one of the causes which influences, perhaps according to its degree, the character of small pox.

2. A second cause which modifies small pox is the condition of the atmosphere. It is a very remarkable fact, that those children who live in cellars generally have the small pox in the confluent form, whereas those children who live in open streets, or in garrets, where there is a free circulation of air, most frequently have it in the distinct form. It is also a curious fact, that certain countries are affected differently at different times. HUMBOLDT, in his travels in South America, mentions that it is far more fatal at some seasons than in others; sometimes passing over the earth like a destroying angel, and sometimes being comparatively harmless. Perhaps we might make a near approach towards explaining such differences, if an accurate register were kept of all the concurring circumstances, physical and moral, an omission very remarkable in the recorded histories of epidemics. No men should be more minute observers than medical philosophers.

3. A third cause which influences small pox is what is called the constitution of the patient, and this you know, when separated into parts, may be an hereditary, an ætal, a sexual, or an

acquired peculiarity. All individuals whose mucous membranes are predisposed, are apt to have the small pox severely, and hence its fatality among pale puny children, and hence the great utility of preserving the general health of children.

4. In the fourth place, the medical treatment may influence the small pox, and hence the hot regimen was so mortal in the time of SYDENHAM. Prejudices, indeed, descend from the profession to the public, so that even now, among the vulgar, we frequently find instances of small pox which had been distinct in the beginning, and which had been made confluent in the progress by an adherence to the old practice—the hot regimen.

I never saw a patient die of distinct small pox; the reason of that is, because the disorder, as far as its internal pathology is concerned, is that of simple excitement; or if any inflammation should exist, it is so slight about the fauces and air passages as to be removed by the natural efforts of the system, or rather by that increased secretion which takes place from the mucous surface. But the confluent small pox is often fatal. The first form, that in which the fever is openly and highly devoloped, is an internal inflammatory affection, as far as its internal pathology is concerned. The inflammation exists on the mucous membrane of the fauces; it extends to that of the pharynx; it passes down that of the larnyx and trachea, even reaching to the minutest ramifications of the bronchia. This you will find in every case where you examine the body carefully after death. In some cases, traces of inflammation will be found in the brain, where delirium had occurred during life, and occasionally the remains of inflammation of the lining of the bowels, the symptoms of which had been present during the progress of the disoder. In the second form, where the fever is masked, the morbid appearances are similar; but in such cases the bronchial affection is so excessive as to prevent the blood from undergoing its natural changes through the lungs to any extent, and therefore all the powers of life fail so remarkably from an early period. You will see an excellent account of the morbid anatomy of small pox in an able paper which Mr. ALCOCK published in the Medical Intelligencer—an account which ex-

actly coincides with what I have myself observed; but the uniformity of this occcurrence in confluent small pox can only be referred to some morbid condition of the blood, aided by those concurring causes which I have pointed out before.

DIAGNOSIS.

There is only one affection which could be confounded with variola, and that is the chicken pox, or the *varicella*. Dr. THOMPSON, of Edinburgh, has attempted to show, in an able work, that varicella is only a modification of the small pox; and though my own observations would incline me to a different opinion, yet I would strongly recommend you to peruse that work, since Dr. Thompson's experience, in this affection, is more extensive than mine. But supposing you were asked what are the differences between the chicken pox and small pox, what would you say? 1. That the precursory symptoms are slighter; 2. The eruption is more irregular as to its time, form, and continuance; 3. The vesicle is not so well defined; 4. The areola is not so vivid and raised round the cuticle—it is not cellular; 6. It has not the central depression; 7. It arises much sooner to the full size, and is apt to be ruptured by the movements of the body; 8. The scab is flatter and comes off earlier. Thus I have enumerated eight distinctive marks, but at the same time it is right to say, that in the milder forms of small pox, it is so difficult sometimes to distinguish the one from the other, that, with the single exception of the central depression, you could not discriminate the one from the other. I have never seen the central depression absent in small pox, and what is remarkable I have never seen it present in the chicken pox.

TREATMENT.

The treatment of small pox requires to be varied, for as the disorder varies, the treatment ought not to be uniformly the same. Now supposing that you were called in the beginning of the eruptive fever, where you had every reason to suspect that the eruption would follow, you should investigate whether that fever be simple or inflammatory, and act just as you would if

there were to be no small pox in the question. If the eruptive fever be rightly managed, according to its simple or inflammatory character, the subsequent small pox will generally be very mild indeed. If the fever be simple, then a saline aperient daily, a spare diet, a cool atmosphere, with rest, and tepid ablutions, will answer every purpose; but if the fever be inflammatory you must use blood-letting, according to its seat and degree. When the eruption comes out and is distinct, let the patient be kept at rest, the diet be spare; let the apartment be moderately cool, let it be refreshed by daily ventilation; keep the bowels gently, very gently, open, and every thing will do well. Recollect that it has a determinate duration, and do not adopt too active a treatment, for really a mild one alone is necessary in such cases.

In the *Confluent* form of small pox, the treatment must be different. Supposing you were called to a patient labouring under the eruptive fever, which threatened a confluent form, then you should prescribe first, according to the degree of that fever, and secondly, according to the nature and extent of the local affection with which it might be complicated. You would pursue an active or an intermediate plan, as the signs and their pathological conditions indicated. But suppose you were called to a patient when the eruption had come out, the tongue being white and moist, the skin hot and dry, and the pulse hard and strong, would you give that patient wine and bark because he had the confluent form of small pox?—Most certainly not. If SYDENHAM could rise from his grave, now that a century and a half have rolled away, he would find that the wine and bark system still prevailed, and would again express his astonishment at the continuance of so mortal a mistake. Confluent small pox, under this ardent and open form, is most highly inflammatory, and for the first three or four days is in the most favourable condition for the use of blood-letting, and yet, Gracious God! wine and bark are indiscriminately recommended. But I must protest, in the strongest manner, against this practice; it is absurd—it is preposterous—it is disgraceful to the age; and what is the consequence of it? Why, that all the patients die under this form where this treatment is adopted—at least I can

affirm, that I never saw one recover. Recollect, however, carefully recollect, that I only recommend blood-letting at an early stage of this form of confluent small pox, while the heat is high, the pulse hard, the tongue moist—as long, I repeat, as these symptoms continue, you may save many lives by blood-letting, and an antiphlogistic regimen. Bleed decisively at first, and generally mild measures will do afterwards; for if you repeat the bleeding too copiously the patient will commonly sink. The late Mr. CHARLES HADEN treated several cases successfully on these principles; Mr. ALCOCK has been extremely successful by a similar plan, and I could adduce several examples in proof of its superior efficacy, under the circumstances before mentioned. In truth, bleeding has been recommended by the first authority in the early period of the confluent small pox as an efficacious remedy, and among these may be enumerated Rhazes, Sydenham, Read, Friend, and Huxham. But unfortunately they did not point out distinctly the conditions under which they used blood-letting, and the abuse of the measure, together with the introduction of the false and fatal doctrine, nay speculation, of abstract debility, has brought blood-letting into undeserved disrepute. If you were to lose the first few days, while the excitement runs high and the tongue remains moist, and if you were, desperately rash, to bleed when the tongue has become glazed and brown, the pulse soft and compressible, the skin not hotter than natural, the voice feeble and the strength really subdued, then you would indeed destroy the patient. If you bleed at all under such circumstances, let it be locally and cautiously. If the throat be much inflamed, apply a few leeches to it and watch the effect of their application; and if the pulse at all sink under the bleeding, stop the oozing from the punctures immediately. At such a stage of these cases there ought to be no curtains about the bed; the air should circulate freely about the sick, but the surface should never be in the slightest degree chilled, the warmth of which should be kept natural by the regulation of the clothing of the patient, and the temperature of the chamber. The diet should be light, and the common drink diluted with lemon juice expressed through

muslin, so that the pulp and fibres might be excluded, which sometimes irritate the mucous membrane of the bowels.

The treatment of the second form of confluent small pox, that in which the fever is masked, in which, in fact, it has the congesto-inflammatory character, ought to be similar to that which has been laid down for the advanced stage of the first form. Whatever may be done in such cases, as far as I have remarked, a large majority will prove fatal, from the great intensity of the bronchial affection, and the little power which patients then have to sustain evacuations. The knowledge of this truth should be well understood by practitioners and parents, since the issue of small pox, and the same remark is applicable to measles, depends mainly upon the state of the patient at the time of the attack, which is far less dangerous in healthy than in sickly children. But as vaccination unquestionably prevents the occurrence of small pox in many cases, and as the experience of practitioners tends to show that it greatly mitigates the disorder even when it does follow vaccination, so you are bound, by every sense of duty, to practice and recommend that operation, which was so strenuously advocated by JENNER. I think it right to say, that, independent of the communicability of small pox by inoculation, we have other proofs which render it certain, that it does propagate itself by contagion, for not only are persons who visited the sick liable to be attacked by small pox, but they in their turn propagate the distemper among others. This double proof is applicable to small pox, measles, scarlet fever, and hooping cough; but I have not been able, to find any similar proof of the contagious nature of typhus fever.

LECTURE XXIX.

SCARLATINA, MEASLES, AND HOOPING COUGH,

ARISE from specific contagions, as the following facts combinedly show:—

1. If a patient be affected by scarlatina, measles, or hooping

cough, and if that patient be visited by a certain number of persons who have never had scarlatina, measles, or hooping cough, some of them would be attacked by one or other of these distempers to which they chanced to be exposed. It might, however, be said, that this alone does not prove the presence and influence of a specific contagion, because there might be a local taint of atmosphere, arising independently of such patients, in or about the house in which they had been confined and visited. Is there then any other proof? There is, and that seems to be conclusive. If you remove a patient labouring under scarlatina, measles or hooping cough, into a perfectly fresh atmosphere, each of them is capable of propagating itself, indefinitely, to second and third persons, who never have been the subjects of the specific affection before.

The contagion of scarlatina, measles, and hooping cough, like that of small pox, sometimes produce a congestive form of fever; at least I have, occasionally, seen individuals attacked by this form of fever in houses where these affections prevailed, and as I could not trace the congestion to a common cause, I inferred that it was the product of a peculiar cause depressing the vital energy. But although the doctrine of congestive fever is applicable to the influence of the peculiar as well as of the common causes, yet, generally speaking, the operation of the contagion of scarlatina, measles, and hooping cough, is succeeded by the stage of excitement improperly called re-action. In the first instance, all these peculiar agents, for the most part, diminish the heart's action and the animal heat on the surface of the body, but in the end this congestive stage is followed by an increase of both. Sometimes, however, these peculiar agents operate at once as stimulants. To give you an example of this: I have known a child affected by the contagion of scarlatina, in which there was no cold stage at all, the hot one ushering in the attack; but, as in other febrile accessions, there is most frequently paleness, languor, and lassitude in the commencement.

SYMPTOMS OF SCARLATINA.

Scarlatina, or scarlet fever, is an affection which sometimes arises

very rapidly, within about four days after exposure to contagion, and usually, I would say, within eight, nine, or ten days. The precursory symptoms are generally these, a pale skin, a pulse weaker than natural, and some uneasiness about the head, back, or stomach; and there is often some stiffness about the neck, or soreness about the throat. The pulse becomes afterwards quick, and the skin hot and dry. The efflorescence comes out at various periods after the developement of the fever; it often comes out in twenty-four hours, sometimes in thirty-six or forty-eight hours, sometimes on the third day, but rarely as late as the fourth. I mention these facts, because the accounts which we have in systematic works on scarlatina are not correct, the efflorescence generally coming out at an earlier period than they have stated. SYDENHAM has described one modification of scarlet fever, which occurs without any sore-throat, and though this be the rarest form of the disorder now, I have occasionally met with it, very clearly, unquestionably defined. For instance, fourteen children were sent into the Hospital having scarlet fever, and thirteen of them had no sore throat. This form might be called simple scarlet fever, with respect to the internal and external pathology, for though the organs are excited, none are positively inflamed. How would you distinguish this efflorescence to be that of scarlatina? In the simple cases, the colour and appearance of the skin more nearly resemble the skin of a boiled lobster than any thing else to which I could compare it. The efflorescence is diffused in broad patches of a bright red; but if you examine them more minutely, you will find that they are made up of minute points running into each other, and thus making the surface florid, especially about the joints. The conjunctiva is more red than natural, and the tongue very often so, particularly near the extremity, with the papillæ red and raised there. The pulse generally ranges from 100 to 110 in young children. The heat of the skin, as indicated by the thermometer, is often about 99 or 100°, yet you have not the combined marks of either an external or internal inflammation. This, then, is the *simple*, or the first form of scarlatina.

There is a second modification of scarlatina which is the

inflammatory. This nosologists call scarlatina anginosa when the fever is fully developed. It occurs, in many instances, with a remarkably hot skin, a very quick pulse, great thirst, moist furred tongue, red at the tip; in short, at first with an open and ardent form of fever, such as I described to be an attendant sometimes of typhus, and sometimes of small pox. In this highly characterised form of scarlet fever, the throat is inflamed; if you look at the tonsils they appear red and swollen, the inflammation being diffused over the adjacent mucous membrane of the fauces. The fever passes on often under this high character for some days, and after a time specks form in the throat, about the tonsils. But recollect that there are sometimes spots of coagulable lymph, which you must distinguish from slough; the former will be removed by gargling whilst the latter remain after gargling; and if you then throw a strong light into the throat, by the reflection of a good candle on a small mirror, you can discover that they are deep and distinct sloughs of an ash or grey colour. Now after a time this open and ardent fever undergoes a change, the heat falling upon the surface of the body, the pulse becoming subdued, the efflorescence of the skin losing its florid colour, and assuming a dull red or copperish hue. The inflammation has then extended down the air passages, it is in fact the supervention of an intense bronchial affection which has caused the protracted case to put on this peculiar character, this smothered or subdued form of fever.

The older authors confined their attention exclusively to the throat. Their pathology extended no further; but what they lacked of real information, they made up, according to the good old custom, by an abundance of crude conjectures. When the throat became very bad, and when the efflorescence put on a copper cast, they called it not scarlatina anginosa but scarlatina maligna, and pretended that it was then a highly putrid affection. But whenever the efflorescence becomes of a copper hue, it depends upon an intense bronchial inflammation, which sometimes occurs at the beginning, and then the fever at once has a masked and smothered character, in which the tongue becomes glazed, in which the heat of the skin is reduced, in which the

pulse becomes weak, in which the voice is feeble, and in which the patient demonstrates great loss of muscular power, whatever local disturbances may exist. This form of fever, as before explained, borrows its peculiarities from the bronchial lining being not only overloaded with blood, but besmeared with an adhesive secretion which prevents the inspired air from coming freely in contact with the blood. The more intense the bronchial affection, the less is the fever developed. Study this special bronchial affection well, trace it through all the disorders in which it appears, and which it modifies, if you wish to avoid the fatality or a conjectural pathology and an empirical practice in specific fevers. There are then two leading forms of scarlet fever, the simple and inflammatory. The second might be again subdivided into the highly inflammatory and the congesto inflammatory, in the first of which inflammation of the fauces and bronchial lining takes place with an open and ardent fever, in the last of which with a masked and smothered fever at the beginning. In both the brain and lining of the intestines may become affected. Do not confine your attention merely to the lining of the air passages, but examine into the state of all the internal organs, connecting the symptoms with the pathological conditions, the effects with their causes.

There is an affection which sometimes arises in the progress of scarlatina important to be borne in mind—an inflammation which spreads from the throat along the eustachian tube into the internal ear. It is especially apt to happen when the inflammation of the throat arises early in the progress of the scarlet fever; and in mismanaged cases the inflammation sometimes remains in the internal ear when the inflammation in the throat has subsided. The bones of the ear may then become carious; the petrous portion of the temporal bone may be penetrated by caries, and the dura mater become inflamed, nay, ultimately the brain itself, as I have occasionally seen. But this rarely happens in rightly treated cases. There is another circumstance to be attended to in scarlet fever: patients are sometimes attacked by pains like those of rheumatism, and I believe that exactly the same structures are attacked, and in the same manner, as in rheumatism.

The pains are seated about the joints and shoot along the muscles. A man was brought into the Hospital labouring under scarlet fever, and this affection in his ancles. He put his feet out of bed one night and exposed them to the cold. The affection left the ancles, and the pericardium became inflamed, so that it undergoes transfers like the common rheumatism arising from cold. A circumstance has been noticed by continental writers. Little miliary points, small portions of raised cuticle, appear here and there, of a whitish colour, and on this account they have called this form the *scarlatina miliaria*. They are accustomed to make very minute distinctions from such appearances, but this mode of proceeding is not attended with any practical benefit. These miliary points are not uncommon, and arise from the excessive heat of the surface.

TREATMENT.

If you were called to a patient affected with the simple form of scarlet fever, when the skin has become uniformly hot, wash the patient all over with tepid water; procure a shallow tub, a common washing tub, and let the patient sit on a three-legged stool in the middle of it, the feet being covered by warm water; sponge the skin with warm water, then wipe it perfectly dry, and put him to bed between clean sheets. Give about two grains of calomel with a little rhubarb, and a dose of cold-drawn castor oil a few hours afterwards. Let the diet be then arrowroot, and the drink cold water; pursue this plan in a cool airy apartment for three or four days, and the patient will generally be convalescent. Be careful not to expose him to cold then, as he might become dropsical. Our systematic writers have made dropsy almost a necessary consequence of scarlatina, but this is not the fact. I have seen, within the last six years, at least four hundred cases of scarlet fever, and I have only seen a single case in which dropsy occurred, which was owing to my directions being disregarded. The patient crammed himself with new bread, and cold or cramming are its usual causes. Dropsy, so far as I have observed, subsequent to scarlet fever, arises often from inattention on the part of the patient, and occasionally from ignorance on the part of the practitioner.

The treatment of the inflammatory scarlet fever must be regulated according to its form. If you are called to a patient in whom the fever is ardently developed, and the throat much inflamed, apply eight or ten leeches to the part; sponge the surface of the body in the way I have mentioned, or pour about two gallons of tepid water at once over the whole surface. In the next place, give a brisk aperient, as a combination of calomel and rhubarb or jalap, followed up by an infusion of senna with sulphate of magnesia. Use a gargle also composed of diluted sulphuric acid with a little syrup; keep the patient at rest in the recumbent posture, and keep him very cool, and on a very spare diet. This is the plan that I usually adopt. Some cases require a more active treatment than this, if the brain or bowels be inflamed, the heat high, and the pulse expanded or hard. In a word, you must bleed, generally or locally, according to the degree of the fever and inflammation, being guided by those principles which I before laid down respecting the removal of the inflammation, which is the main object in such cases. Preserve the vital organs from derangement, and the recovery will be certain, in the ardent form.

With regard to the masked form, in which the bronchial inflammation is intense, attended by a copper-coloured efflorescence, a soft compressible pulse, a glazed tongue; the subdued heat, and a weak respiration, with sloughs about the throat, you must be cautious as to evacuations. If you were to treat it as actively as the other, you would almost invariably be unsuccessful. You must manage it mildly; put on a few leeches say four or five, to the throat, and if the pulse rises you may repeat them, if the inflammation should require them; but if the pulse sink on a very small loss of blood, do not apply them again. If the skin be cool, lay the patient between blankets, and put a bottle of warm water to the feet. Regulate the temperature of the room by the thermometer; let it be kept under 64° in such cases, the ventilation being free. Give mild doses of calomel joined with small ones of rhubarb, followed up by a little cold-drawn castor oil; and let the diet be bland. But be sure to avoid all extraordinary demands upon the strength.

About a drachm of the solution of chlorine may be frequently given with advantage in this masked form, in the course of twenty-four hours, mixed with about six ounces of distilled water. Where it irritates the mucous membrane of the intestines, lemon juice may be substituted, a sprinkling of which, being added to the common drink, is often refreshing and grateful. In the advanced stages, the sub-carbonate of ammonia is sometimes useful by determining to the surface, and when the pulse falters, a little wine may be now and then allowed. This masked form of fever is most common in delicate children and adults, and certainly requires a very guarded treatment, particularly in London. But if you have distinctly comprehended the pathological and practical principles which I laid down in typhus fever, you will be at no loss to apply them here. Scarlet fever, however, under its ordinary characters is a milder affection than typhus fever, running a shorter course, and leaving far less prostration. Bating the masked and smothered form, not one case in a hundred ought to be fatal.

MEASLES.

The first symptoms that appear to usher in an attack of measles are watery eyes, a running nose, occasional sneezing, and some degree of cough. These precursory symptoms continue for three or four days before the eruption comes out. But I have seen measles occur without being preceded by any catarrhal symptoms; during the last summer, I saw several cases of this kind. There is one thing that you ought to be aware of, namely, patients are sometimes attacked by inflammation of the larynx, before the rash comes out, and they would be in danger of dying from suffocation, if you were to wait until the rash appeared. Sometimes, also, the brain becomes inflamed, before the appearance of the rash; I remember in particular the case of a boy where this happened. You cannot be surprised at this, when you recollect that the excitement is fully developed for two or three days before the rash. The rash of measles generally appears first on the neck, chin, and face, and then gradually spreads to other parts of the body. It has been said that the

rash of measles is darker than the efflorescence of scarlet fever, and it is so generally, but not universally. It is true, generally, because the affection of the mucous membrane of the air passages is usually more fully developed in the measles.

DIAGNOSIS.

How would you distinguish *measles* from *scarlatina?* The first thing to remember is the appearance of the catarrhal symptoms in measles, before the eruption. 2. The rash appears in smaller points than in scarlatina, being more like millet seeds, just raised above the level of the skin, and of a dusky hue. 3. The rash of measles differs also materially from the efflorescence of scarlet fever upon the face, it is diffused in broad flashes in the latter, whilst it is invariably in small distinct elevations in the former. 4. In measles, if you look under the throat attentively, you will find small raised red spots upon the soft palate, but in scarlet fever there is a diffused efflorescence over the whole throat, in which such spots are not at all perceptible, 5. There is a peculiar smell in measles, which is not present in scarlet fever.

PATHOLOGY.

With respect to the pathology of measles, it is similar, generally, to that which I have described in scarlatina. The fever attending measles generally puts on the inflammatory character, and the inflammation is generally seated about the air passages, especially if the patient be kept hot. I saw several cases some time ago, where the patients were nearly dying from being kept too hot; the windows were shut, the curtains drawn, and the door never allowed to remain long open. These cases were all evidently developed in the first instance, but they became typhoid from want of fresh air. Then you will recollect, that what I have said about the ardent, or open form of fever, and the smothered or masked form, is applicable to the measles, as well as to scarlatina. The rash of measles usually goes away in three or four days, but it continues longer if the fever be protracted, and this is the case likewise with the efflorescence of scarlatina.

TREATMENT.

With respect to the medical treatment of measles, if you see a child running about the house who has a slight running at the nose, and a little cough, with scarcely any degree of fever, if you give him a laxative, avoid cold, and adopt a spare diet, he will generally do well without any other means. But if you find the signs of any internal inflammation you must be upon your guard, and treat it according to those rules which I before so repeatedly prescribed, when I spoke of particular inflammations. When the skin is frequently hot and dry, and the pulse round or resisting, blood must be drawn, and the patient must be kept upon a strictly antiphlogistic diet. But if you see a patient labouring under the masked form of fever, keep him in bed, surround him with a fresh atmosphere, move his bowels mildly, and be cautious about blood-letting. In such examples those means which at the same time act gently on the bowels and skin, are the most efficacious. In measles, as well as in scarlet fever, sometimes the lining of the intestines is inflamed. But do not suppose that this is the case whenever the tongue is red, for that redness is often a part of the efflorescence in the one and the rash in the other. Remember what I before remarked,—do not trust so much to any single symptom, as to a combination of several symptoms, in forming an opinion of the seat and nature of the affections,

As a general rule, a neutral temperature is the best in the measles, I mean one by which the surface of the body is neither chilled nor heated. But when the skin is universally moist, you should be mindful against currents of cool air, for they are liable to create serious inflammation ; on the other hand, when the skin is uniformly hot and dry, a cool atmosphere is delightfully refreshing, and even beneficial by diminishing the excitement. Again and again in most examples of the latter, I have seen the most agreeable changes induced by lessening the temperature of the sick chamber, and by abstracting a little blood. During convalescence be very careful in measles, about pre-

serving the natural warmth of the skin, chillness of which often tends to pulmonic affections, acute or chronic.

HOOPING COUGH.

Hooping cough comes on in general like a common catarrh, except that there is seldom a running at the nose. After the lapse commonly of a few days, the cough comes on in fits, and a child, if standing at a distance from a table or chair, will run to them and catch hold to prepare himself for the struggle, as if he has a warning of the fit. There is then a sudden and strange sensation about the larynx; the face becomes turgid, the eyes swollen and red, and the cough is made by several rapid expirations in succession, followed by a long and deep inspiration, accompanied by a peculiar noise called the "hoop." These fits of coughing, or hoop, terminate in two ways, either by mucous expectoration, or vomiting, or both. One attack is succeeded by another, and terminates in the same way. This affection is rather alarming when it attacks very young and very delicate children, for such are very liable, likewise, to irritation of the mucous membrane of the intestines, and subsequently to convulsions from a sympathetic affection of the brain. In examining the bodies in fatal cases, I have always found traces of inflammation about the mucous membrane of the larynx, but I have frequently found proofs of inflammation of the mucous lining of the small or large intestines of children, and often an overloaded condition of the pia mater, with some opacity of the arachnoid, and effusion between these membranes, or into the ventricles. The irritation appears to commence first about the larynx, and often spreads down the trachea and bronchia; it next attacks the mucous membrane of the bowels, and, lastly, the brain becomes affected; at least, this is the order which I have most frequently observed. Hooping cough is hardly ever a serious disorder where fever and dyspnœa, or difficulty of breathing, are absent; but it is frequently a serious disorder, especially in infants, or very delicate children, where fever and dyspnœa are present. Hooping cough is far more fatal in London than in the country, if I might form an opinion on the

subject from my own observation. This, I believe, much depends upon the general delicacy of the children, by which the mucous irritations are apt to be more urgent; but I cannot help suspecting, that it principally depends upon the more active treatment that is generally adopted in the British metropolis. A very common plan is to sicken children, two, three, or more times in the day by ipecacuan or antimony; and I have in many cases distinctly traced the origin of the irritation of the mucous membrane of the bowels to the effect of one or other of these medicines, or to small doses of the prussic acid, and generally the affection of the brain has succeeded apparently as a consequence. Let me strongly warn you against the common one of giving daily nauseating or emetic doses of antimony or ipecacuan in hooping cough. Generally speaking, if you put the little patients on a bland diet, if, in cold weather, you place them in a regulated temperature of from about 58° to 64°, if you give them a little mild aperient medicine if necessary, and prevent acidity by a little carbonate of potash or soda, the complaint will leave them in a few weeks. Hooping cough has a sort of determinate duration. If mild weather it lasts about six weeks or two months, but longer in cold weather, unless the children be kept in an artificial kind of warm climate. All attempts to shorten its duration by violent measures are not only fruitless, but commonly very pernicious. Where, however, fever and dyspnœa arise, you must apply the appropriate remedies for the removal of the cause; and when the complaint assumes a chronic character, a change into a fresh and bland air is often attended with the happiest effects. But where that cannot be accomplished, a mild and simple diet, a gentle aperient occasionally, a little carbonate of potash, with a few drops of the tincture of hyoscyamus, and the occasional employment of the tepid bath, often answer an excellent purpose. If you wish to shorten a chronic hooping cough, keep the functions of the skin right, and avoid irritating the mucous membrane of the alimentary canal.

LECTURE XXX.

ON PUERPERAL, OR CHILD-BED FEVER.

WHAT has been improperly called puerperal fever, or child-bed fever, is not an affection *sui generis*, but really a congestive, simple, or inflammatory fever, occurring in the puerperal state from a common or a peculiar cause; and though I adopt that term, under a certain definition, in compliance with usage, yet I cannot help thinking that a nosological distinction might as well be taken from the age or complexion of a patient, and, therefore, we might, consistently with such absurdities, have an infantile and a senile fever, or dark and fair fever. As the foolish names, which formerly prevailed in chemistry, had given way to an improved philosophy, so we should now remove every improper word from medicine, since improvements almost as general had, in our times, taken place in the latter as in the former. The term puerperal, or child-bed fever, should be called fever occurring in the child-bed or puerperal condition; and, we should trace it through its various forms as modified by that condition, and by the remote occasions, common or peculiar, from which it proceeded.

Fever, thus occurring in the child-bed state, is modified like every other fever; first, by the remote occasion, and secondly, by the condition of the patient at the time of the attack. If small-pox attacked a woman after delivery, it would have the character of small-pox, but on account of the peculiar condition of the patient, the serous membrane, called peritoneum, and the uterus, would be very likely to become inflamed from their predisposition, still the affection would be essentially small-pox. Again: if measles, or scarlatina, attacked a woman in the same condition as the preceding, the affection would have the character of measles, or scarlatina, with the addition of the abdominal affection; and the same might be said of typhus, which sometimes attacks shortly after delivery, and which, under a continued character, assumes the three forms above mentioned.—1st. A highly inflammatory form, attended with an intense hot skin, a rapid

pulse, either contracted and hard, or full and expanded. 2d. An intermediate form, in which the heat is less intense, and the pulse less full and hard. 3d. A third form, in which the pulse is soft and compresible, the heat on the surface not higher than natural, in which, indeed, the powers of life appear subdued from the very onset. When typhus fever attacks a woman in child-bed, under the first or second form, she has a fair chance for her life when properly treated; but if she be attacked by the third form of typhus at the onset, or if the first or second forms should advance into the third, from delay or mismanagement, it will most frequently be fatal; for in that masked or smothered form the special bronchial affection is fully developed, with an intense inflammation of the peritoneum, and the active treatment fitted to remove the last aggravates the first; and, on the contrary, the mild treatment proper for the bronchial would make no impression on the abdominal affection: in a word, in confirmation, if the affection exist in that form, the treatment of the one will be inconsistent with the treatment of the other, and therefore generally prove fatal.

Many inquire anxiously, is puerperal, or child-bed fever, a contagious affection? If small-pox, or measles, or scarlet fever occur in the child-bed state, the fever would be so unquestionably; but, in regard to typhus fever, the point is doubtful, and requires more cautious observation than has been bestowed. The wards of a lying-in hospital sometimes gives rise to fever after delivery. I caution practitioners not to visit puerperal women in the clothes in which they have dissected a dead body, since a putrid effluvium is often given off from them, which may, I conceive, in some cases, give rise to fever. Fever, in the puerperal state, sometimes arises from a more generally affected state of atmosphere, and in this way it spreads, or appears to spread, over a tract or district of country. This happened some time ago in Aberdeenshire, Edinburgh, and some parts of the north of England. This state of the atmosphere seems rather to predispose or excite, so that where it exists several cases occur at or about the same time, a fact which repeatedly occurred in London. But fever, in the puerperal state, not only arises from a local in-

fection or general distemperature of the atmosphere, but from a common cause, from common depressants, stimulants, irritants, or interruptants, as before defined; there are some powerfully predisposing circumstances.

The first circumstance, which predisposes to fever in the puerperal state, is a plethoric condition of the subject. There are, in the state of gestation, two systems to be supplied with blood—the system of the mother and the system of the child; so that the pulse is more expanded, and when any blood is drawn it exhibits the buffy coat, bordering almost upon inflammation. This plethoric condition of the system, during pregnancy, indicates the propriety of avoiding too full a diet on the one hand, and to stimulating drinks on the other. The diet, however, should not be too spare, for then a degree of nervous irritation is apt to be produced. The practitioner in midwifery, who is engaged to attend the female, should make a point of visiting her several times during the last month of gestation, for it not unfrequently happens that some degree of fever then arises, which being neglected, is generally followed by a higher degree after delivery. If a patient, about this time, have a skin hotter, and a pulse quicker, than natural, the face flushed, the eye bright, the tongue furred, and if the nights be restless, a few ounces of blood should be taken away, the patient should be put upon an abstemious diet, and a mild aperient medicine should be occasionally given. A second predisposing cause of fever in the puerperal condition, is the increase of sensibility and of the contractility, by which is meant an increase in the capacity or power of sensation, and an increase in the power or capacity of contraction; so that either stimulants or irritants make a much more powerful impression upon the nervous system, and excite, through it, the heart and vascular system. Lycurgus, the ancient law-giver of Sparta, appears to have been conscious of this, and, therefore, he enacted, that all pregnant women should take daily exercise in the open air. It is to the want of a proper degree of exercise, that childbed women, in the main, do not recover so well in London as they do in the country. Many women in town cannot go out without a servant; there is a greater restraint thrown on their

actions; their habtis become more sedentary, and preternatural sensibility is the consequence. Another point of great importance to attend to, is the sleep; nothing contributes to render a person irritable more than the want of sleep. It is also necessary to keep the patient's mind as tranquil as possible, and not only during, but after, delivery. Many cases of puerperal fever occurred after the death of the late Princess Charlotte, because the minds of females in the same situation were rendered exceedingly solicitous. The same has happened when any epidemics have prevailed. The practitioner ought to inspire his patient with the most unbounded confidence in the powers of prevention, for if the patient observe the least hesitation on his part, or perceives any degree of uncertainty in his mind as to the result, the consequences might be fatal to an anxious and inquiring female. When a woman loses a large quantity of blood, either during gestation or after delivery, she is very apt to become the subject of inflammation. It is a very great error to bleed females largely and repeatedly, as is often done during gestation, because it excites a degree of hæmorrhagic reaction, and makes them irritable. But if there be a disposition to plethora, the practitioners should bleed moderately, and pay great attention to the regulation of the diet and of the bowels.

The third predisposing cause of fever in the puerperal state, is the peculiar condition of the abdomen and uterus. The uterus enlarges immensely during gestation, the peritoneal covering of it, and that lining the abdomen, is put powerfully upon the stretch; the bowels are pressed upwards and backwards, their functions are disturbed, and they become prone to inflammation, especially, if neglected during gestation, where large accumulations of scybala occur in the colon. The bowels should be kept gently open, during the whole time of gestation, by mild aperients; and, in general, there is nothing better than cold-drawn castor oil. It sometimes happens that a woman, during pregnancy, complains of a peculiar dragging pain in the lower part of the abdomen, which prevents her from taking a proper degree of exercise; and when this is the case, it may be suspected that the umbilical cord is twisted about the neck or extremities of the child, and then practitioners should

be very cautious in the management of the labour. CELSUS observes, that we may consider the uterus and the neighbouring parts as recently wounded; and this is so especially the case during the first five days after delivery, that too much care can hardly be taken to avoid all the exciting causes of fever.

Cold is a depressant, so is fear, or any mental shock whatever; indigestible food is often another. Through the influence of either of these the heart's action may be instantly sunk; the animal heat is then withdrawn from the skin; the blood retires from the surface of the body, and accumulating about the right side of the heart and large veins, the heart's action is at length preternaturally roused, the blood is thrown from the centre to the surface, the pulse becomes quicker, and the skin hotter; in short, perfect fever is induced. But sometimes the heart's action is not roused at all, and the patient dies under the first shock of congestive fever. Generally, however, re-action takes place, and simple or inflammatory fever is produced. Sometimes the appearance of puerperal fever can be traced to the operation of a stimulant as an exciting cause, such as a high temperature. If the apartment of the patient be much heated after delivery, or if the mind be excited, fever is frequently produced. There is, perhaps, no feeling so mysterious as that which exists between the mother and child, particularly the first child. This feeling is heightened if she be allowed to indulge in fondling it soon after delivery, or if friends or servants remain in the room admiring it, and talking so as more strongly to awaken the sensibility of the mother. The strictest direction should be given to avoid a high temperature, in any degree of mental excitement. Another cause of occasionally producing fever, is the irritation produced by too frequent an examination. There are some persons, who, by their constant interference, would almost induce the ignorant to believe that every thing in labour was to be done by art; but the truth is, that every thing is to be done by nature, and no character is more dangerous than too officious an accoucheur. Fever arises not only from the irritation of too frequent examinations, but likewise from the too hasty extraction of the placenta, and the unnecessary employment of instruments. Instruments are

used far more frequently than is necessary, and, excepting in cases of deformity, they are hardly ever required. I remember one case of labour, where, in the early stage of pregnancy, the orifice of the uterus had been closed by the adhesive inflammation, so firmly seated, that it did not yield to the throes of labour. An incision was made through the closed os uteri by a scalpel, and the delivery was afterwards effected by instruments. Yet, from the great care taken in the after-treatment, the patient recovered without a bad symptom.

Another cause of fever in the puerperal state, is the irritation arising from the early use of too strong purgative medicines. A practitioner in the country sent me an account of four cases of what he called puerperal fever, all of which appeared to arise from this cause. The old woman's rule was generally the best, namely, not to give any purgative for the first three days after delivery, till about the period when the milk first appears in the breast; and then the best aperient is an infusion of senna, with small doses of the sulphate of magnesia and manna, an opiate being given, after its operation, to allay irritation. An exception to the above rule was to be found in those cases where the large bowels were loaded with scybala, when cold-drawn castor oil was the most suitable. Another source of irritation which sometimes brings on fever, is an over-distended bladder, which should be studiously avoided; and all irritations about the external parts be they ever so slight, should be soothed, lest they occasion general disturbance and internal inflammation. A fourth cause, which now and then brings on fever in the puerperal state, is an interruptant, sometimes existent in the condition of the liver; the function of the liver being impaired, the skin has a blanched appearance, looks something like putty or dirty tallow, and the stools show a deficiency of bile. There is a large accumulation of blood in the vena portæ and its associated veins, which, interrupting the return of blood from the intestines, predisposes them to inflammation. The remedies for which condition are warm light clothing, tepid drinks, and an occasional small dose of calomel, followed up by a little infusion of senna, or cold-drawn castor oil.

When fever does occur in the puerperal state, it is generally of the inflammatory form, whatever may have been its remote cause ; but sometimes of the congestive, and occasionally of the simple form, agreeably to former definitions of these terms. There were three forcible reasons why it should be so often of the inflammatory form: 1st. The increase of the sensibility and contractility is so great, that, where excitement is once produced, it becomes so excessive as to lead to local inflammation. A second reason is, that this high developement of fever frequently occurs in a plethoric state of the vascular system, another strong predisposing cause to inflammation, which, however, is lessened by the flowing of the lochia and the milk. A third cause still more influential, is the tender condition of the abdominal and pelvic viscera, which, therefore, sustain the principal attack of inflammation, although, in some cases, other organs, such as the brain and lungs, suffer from a concurring predisposition. The knowledge, therefore, of the predisposing and exciting causes is highly important in a preventive point of view ; so much so, that a medical man often shows his wisdom more in the prevention of disorders than in their cure; and if he have the opportunity of seeing his patient frequently during gestation, and manage the case rightly at and after delivery, he will seldom see a case of what is termed puerperal fever, except in peculiar constitutions ; and even then the attack may be often warded off by judicious management. The affection which you most frequently meet with in women at the period of child-bearing will be an open and highly-developed form of inflammatory fever, existing under an endemic or epidemic state of the air, or from a common agent.

When it arises from a depressent, the woman has a shivering or cold fit first; but when it arises from a stimulant, she has mostly no shivering at all. In either case, excitement being established, the patient has a hot skin, a rapid hard pulse, ranging from 120 to 140, a flushed face, a bright eye, a furred tongue, a hurried respiration, and a remarkably tender abdomen, so tender, that if the hand be pressed on it steadily, the patient winces immediately, and has a remarkably anxious countenance. If the inflammation be acute, the stage of excitement seldom continues

more than forty-eight hours, and sometimes it runs its course in twenty-four hours; but if the inflammation be sub-acute, it goes on for three or four days. Whether this stage of excitement continue twenty-four hours or forty-eight hours, or three or four days, it is followed by the stage of collapse; and so very important is it to distinguish these stages, that the only chance which the patient has for life, depends upon the prompt employment of proper means during the first stage. When the stage of collapse supervenes, the respiration is not only far more quick, but weaker than natural. The pulse becomes much weaker and more rapid, being above 140, and has not the round resisting feel as in the first stage of excitement. The face becomes sunk, and the eye hollow and dull, while the skin grows damp and cold. The stomach, too, becomes irritable, and there is nausea, followed by a passive gulping; the belly becomes remarkably distended by the extrication of air in the large bowels, and the patient generally passes copious stools, which are exceedingly offensive. These are the symptoms of the stage of collapse; the patient complains of no pain then, except hard pressure be made upon the abdomen. If the body of the patient be examined after death in such cases, especially when much blood has not been drawn, the peritoneum will be found highly injected and vascular, as also a large portion of the serous membrane of the bowels with a copious secretion of serum and lymph into the abdomen; and sometimes the inflammatory effusion will be found lying in the uterus and bladder, which had participated in the inflammation. There is no affection that could well be confounded with this serous abdominal inflammation. An inexperienced person might confound an inflammation of the uterus with a distended bladder; but that might be easily ascertained by the introduction of a catheter. If the uneasiness arise from a distended bladder, it would be speedily removed by drawing off the water. Again: the feeling of the swelling is very different; the swelling of the inflamed uterus is hard and circumscribed, whilst the swelling produced by a distended bladder is less hard and more diffused. After-pains might be mistaken for inflammation of the uterus, but a little attention would soon discover the difference. In after-pains

there are intervals of complete ease, and pressure on the abdomen does not increase the pain. The position of the patient also is entirely different, for when the uterus or poritoneum is inflamed, the patient is very cautious in moving the legs and trunk, which is not the case in after pains. Besides, there is the presence of fever in the one, and the absence of it in the other. The great peculiarity of inflammation of the peritoneum in the puerperal condition is, that in consequence of the highly sensitive state of the nervous system, and the highly excited state of the vascular system, it runs a more rapid course, and therefore requires a more prompt and active treatment. The necessity of arresting such formidable cases at the commencement is obvious, as the loss even of a few hours is generally fatal. Blood-letting should be carried to the complete removal of the pain, or to approaching syncope, with the exhibition of from three to five grains of opium in the form of a soft pill, or from 80 to 100 drops of the tincture of opium immediately after the recovery of the patient from the faintness which follows the loss of so much blood. Opium, in preventing the return of the heart's reaction, in producing a general perspiration, and in procuring tranquil sleep is of great utility. One decisive blood-letting, followed by the opium, will effect a cure. But you should, in such urgent and dangerous cases, visit the patient about two hours, or at latest about three hours after the first venesection, and if you then find any pain on pressure over the abdomen, with a quick pulse and a hot skin, you should not hesitate a moment to bleed the patient again, in the same bold manner as before, giving about two grains of opium after the operation, combined with the same quantity of calomel, which prevents the opium restraining the secretions of the liver. The patient should be left perfectly quiet, the chamber being darkened for about three hours longer, when she ought once more to be punctually visited by the medical attendant, who should do nothing more, if he found all signs of abdominal inflammation removed, but persevere in a strictly antiphlogistic regimen, with rest and quiet; but that, on the contrary, if he then ascertained that pain still existed in the belly, in conjunction with fever, he should a third time bleed the patient without a moment's further

delay, till the pain was wholly removed, or till syncope approached, afterwards giving one grain and a half of opium, with the same dose of calomel, to sooth the patient, if possible, to sleep. You will, sometimes, have reason to bleed a second time, and occasionally even a third time. In the acute forms of inflammation there is a necessity of crushing the disorder within the first six, eight, or ten hours, or such cases were generally fatal from the delay or indecision of practitioners at this important time; several cases terminate mortally, from the long intervals allowed to elapse between the blood-letting. Nine patients out of ten would be saved by these measures. The efficacy of this plan in acute and sub-acute peritonitis and sero enteritis, which occurred under ordinary circumstances, having attended upwards of 150 of such since I first used the opium so freely in conjunction with blood-letting, was great. Some accoucheurs, in this metropolis, to whom I have communicated this method of giving opium, have found it as beneficial as myself, when given under the same circumstances in puerperal cases. The concurrence of abdominal pain, a hot skin, and a quick pulse, with a moist tongue, I consider necessary for the full display of the benefit of opium after blood-letting. With respect to purgative medicines, I think it better that they should not be given until after the inflammation is removed, except in those cases where the colon is overcharged at the time of the attack, and then enemata, upon the whole, were preferable, provided they were properly administered, so as to avoid giving rise to local irritation. When strong objections exist against the use of enemata, on the part of the patient, recommend that the bowels should be opened by cold-drawn castor oil; but they frequently act by the operation of bleeding alone, and full doses of opium. I caution you against the abuse of blood-letting. Recollect the difference which exist in the treatment of serous and mucous inflammations; in the former of which I find bold and repeated general blood-letting so beneficial, whereas in most mucous inflammations I have found prejudicial, while local bleeding by leeches has proved exceedingly useful, especially under the sub-acute forms of mucous inflammation of the intestinal canal.

As acute inflammation of the serous abdominal membrane is a perilous affection in the puerperal state, practitioners in midwifery should be remarkably cautious, not only during labour to avoid irritation, whether mental or material, but after labour to remove, if possible, all the exciting causes, and in particular to keep the patient upon a spare farinaceous diet for the first five days at least. In the next place, every accoucheur should make it a rule, if possible, to visit his patient morning and evening for the first few days after her confinement, in order that no time might be lost, if fever should appear.

LECTURE XXXI.

FEBRILE DISORDERS.

All febrile disorders proceed from common or peculiar remote occasions. The common occasions are the ordinary agents of nature, which might be subdivided into depressants, stimulants, irritants, and interruptants. The peculiar occasions are distinguished from the common ones by some special inherent property, and the principal of them are malaria, or marsh miasm, putrid animal or vegetable matter, general distemperature, of the atmosphere, and human contagions. All these various occasions, whether common or peculiar, produce three forms of fever, the congestive, the simple, and the inflammatory forms. The congestive form, under its perfect character, is distinguished by the diminution of the animal heat on the surface of the body, by the weakness or oppression of the pulse, by the prostration of muscular power, and by the marked disturbance of some internal organ, especially the brain, the heart, the lungs, and bronchial lining, the stomach, liver, intestinal lining. Sometimes one of these parts suffers, sometimes two or three, and sometimes all. On examining bodies after death, proofs of venous congestion, or the effects of venous congestion are found in the organ, the functions of which had been affected during life, but often the capillary arteries, especially those of the

primæ viæ, and bronchial lining, are simultaneously gorged. The congestive form of fever frequently proves rapidly fatal from common remote occasions, but still more rapidly so when it arises from peculiar ones, a remarkable example of which lately occurred in India, for what was there recently called the cholera morbus, was only an epidemic congestive fever, in which the liver and intestinal lining, the lungs and bronchial lining, mainly suffered. The authors who have written upon the subject did not seem to be aware of the bronchial affection, notwithstanding the existence of its most unequivocal symptoms in the livor of the surface during life, and the darkness of the blood after death.

The simple form of fever is distinguished by the skin being hotter, and the pulse at the same time quicker than natural, without any discoverable sign of internal or external inflammation; the blood circulates with more than ordinary speed, but is so equally distributed throughout the body, that no particular organ sustains an interruption sufficient to give rise to inflammation. This form of fever is the most frequent among children, and can only exist in sound constitutions, where the internal or external parts have no latent faultiness. Though this form of fever most frequently proceeds from a common remote occasion, yet it sometimes is connected with a peculiar one. Thus scarlatina, measles, and small pox, under their mildest characters, are simple fever, with reference to the internal organs, which are excited, but not inflamed; simple, general, and local excitement being distinguishable from inflammation.

The inflammatory form of fever is distinguished by the skin being hotter, and the pulse at the same time quicker than natural, while there are co-existent signs of some internal or external inflammation. The reason why the fever puts on the inflammatory form, when it arises from common remote occasions, is generally, that some hereditary, ætal, sexual, or acquired predisposition exists, which becomes converted into inflammation, from the excitement of the heart and vascular system, though unquestionably inflammation may arise primarily from the direct influence of an irritant. The reason why fever, when it

arises from a peculiar remote occasion, puts on the inflammatory form so frequently, partly depends upon the special property of the cause, which operates, as before explained, on particular structures, especially the mucous tissue, and partly upon the state of the patient at the time of the attack, for if any internal organ then be predisposed, that organ may become inflamed, on the ordinary principle of excitement. The inflammatory form of fever, even when it arises from common remote occasions, necessarily has a most extensive range of character, for the inflammation being seated in different parts of the body, and in different structures, the functions of which are widely discrepant, the symptoms of this inflammatory form of fever are consequently varied extremely, though its nature be essentially the same, and though it be always compounded of fever and inflammation. Even the inflammatory form of fever, when it arises from peculiar causes, has also a considerable variety of expression, not only with respect to its external, but to its internal pathology; for the skin is differently affected in scarlet fever, in measles, in small pox, and in typhus fever, while in the three former, the fauces and air passages are most liable to suffer, but sometimes the lining of the bowels and sometimes the brain. Again, in typhus, the pia mater and arachnoid, the bronchial and intestinal lining, are always found inflamed in fatal cases when the fever had been developed, and sometimes even the internal tunic of the arteries and veins, a circumstance which has been too much overlooked by morbid anatomists in the typhoid or typhous modification of fever.

In the perfect congestive form of fever, the great object in the first instance is, to restore the balance of the circulation between the external and internal parts, and between the venous and arterial sides of the circulation. In all those cases where the skin is universally cold, and the heart's action sunk, the application of dry heat, under the form of an air bath, and the internal use of stimulants are the best; but when the animal heat and the heart's action have been in some degree restored, then the abstraction of blood, if any organ should remain oppressed, is generally the best measure, the quantity being regulated care-

fully by the effect upon the pulse of the patient, the local disorder, and the general power. In some of these cases, the symptoms are at once removed by these measures; but in some they entirely fail, where the shock is most excessive; and in others they remove the congestive symptoms, which are soon followed by those of an inflammatory nature, requiring to be managed accordingly.

In the simple form of fever, the objects are to lessen the heart's action, to diminish the animal heat on the surface, and to restore the secretions to a natural state. Rest, a bland spare diet, quietude, tepid ablution, a fresh atmosphere, a regulated temperature, which shall neither chill nor heat the surface, and mild aperient medicines, will almost always suffice in this form of fever, blood-letting, local or general, being commonly not necessary, never, indeed, except in those cases where inflammation is threatened.

The inflammatory form of fever, even when it arises from remote common occasions, requires various modifications of treatment; for though the object be merely to remove the inflammation, yet that inflammation occurs in different structures, and those structures are a part of beings different in age, in sex, in strength, and in other peculiarities, all of which require to be taken properly into account. In infancy and old age, copious evacuations of all kinds, but especially of blood, are worse sustained than at any other period of life, creating extreme irritation and exhaustion in infancy and often irretrievably sinking the powers in old age. Besides, the skin and mucous membranes are more apt to suffer from irritants in infancy than in adult or middle age. Women, generally, do not bear evacuations so well as men, but there is an exception to this remark in fever occurring after child-bed, where the serous membranes are inflamed, and also in puerperal convulsions from congestion of the brain, in both of which prompt, and sometimes shortly repeated and bold bleedings are necessary to save the life of the patient. Persons of a weak and lax fibre suffer more from copious losses of blood than those of a strong firm fibre. With respect to structures, serous and fibrous inflammations, where the fever is fairly ex-

panded, require, generally speaking, much more active blood-letting than mucous inflammations; and again, in mucous membranes, especially of the intestinal canal, local bleeding by leeches is generally preferable; while in both, if seated in the abdomen, all harsh purgatives should be studiously avoided. Acute inflammation generally requires more active evacuations than sub-acute inflammation, but to this remark some exceptions exist; for when an inflammation is excessively acute, for instance, on the bronchial lining, it sometimes so smothers the excitement, so oppresses the vital functions and changes the blood, as to make the observant practitioner most guarded in the use of all evacuants, except those which operate gently on the bowels and skin. Moreover, in active inflammation, where the heat is high on the surface, where the pulse is hard as whip-cord, where the tongue is moist, and where the strength is unsubdued, blood-letting is generally well sustained; whereas in passive inflammation, where the heat is low on the surface, where the pulse is soft and feeble, where the tongue is glazed and dry, and where the strength is prostrate, every thing like copious evacuation should be most diligently shunned.

Erysipelas assumes, in the British metropolis, three characters, each of which demands a different mode of management. The first modification of erysipelas is called phlegmonoid; the second, erythematic: and the third, specific, by way of distinction. The phlegmonoid erysipelas attacks strong individuals, and like the rest, abstractedly considered, may be viewed as an inflammatory affection of the skin, which sometimes spreads to the cellular membrane beneath. In this phlegmonoid modification, the inflamed part is vividly red; it swells rapidly, and is attended by a very hot skin, a full and hard, or a contracted and hard pulse, and a moist tongue throughout its progress. It appears upon the face or extremities, and is sometimes attended, in its origin or course, with some internal inflammation. The erythematic erysipelas attacks weak persons, especially when confined in the wards of an hospital, or in a close situation. The inflamed part, generally, has a mulberry appear-

ance; it does not swell so rapidly, but vesicles are apt to appear earlier upon its surface; the heat of the skin is not so high, the pulse is soft and feeble compared with that in the phlegmoniod, and the tongue becomes glazed, dry, and brown, in fact, the attendant fever puts on the typhoid character. In this modification of erysipelas, when it proves fatal, the pia mater and arachnoid, the bronchial and intestinal lining, and sometimes the internal coats of the larger arteries and veins, exhibit distinct traces of inflammation; so that the external affection called erysipelas, really is the smallest part of it, so many internal organs being simultaneously affected. The specific erysipelas arises in the course of genuine typhus fever, and may have, at the commencment, the phlegmonoid, and at the close the erythematic character; but one very remarkable circumstance in regard to it is, that it may attend a remittent or a contined form of typhus, a fact which requires an important alteration in the treatment.

While the phlegmonoid erysipelas now requires as active evacuations as those employed by SYDENHAM, the erythematic, on the other hand, requires the greatest caution; the wine and bark system, so generally adopted in London, should be reprobated, and mild evacuations from the bowels, with a bland diet, and the influence of a pure atmosphere, recommended, without which no means will be generally efficacious. As to the use of wine, it should be here regulated, in certain cases, by the same rules as I have laid down in typhus.

As to the specific erysipelas, it may be readily cured when combined with the remittent typhus, by the sulphate of quinine, where the remissions are distinct; but where it occurs with the continued form of typhus, bark is decidedly prejudicial. I have no faith in any local applications in erysipelas, and have abandoned them all, except the use of a little arrow root, dusted gently over the part, or the application of a blister to the nape of the neck, which has repeatedly arrested erysipelas of the face. The difference between those fevers which arise from common and peculiar causes, have a sort of

determinate duration, which practitioners should duly regard, but they make the treatment too active in the middle and advanced stages.

I caution you against those vague doctrines of debility which are still advocated—doctrines which are so entirely of the last century as to be utterly unworthy of this enlightened period—doctrines which are alike false in theory and fatal in practice; whereas the simple views which I have taken of the pathology of fever and fully substantiated by a reference to symptoms and morbid anatomy, and the precise application of the few measures which I recommend in practice has led to success.

Convalescence should not be viewed as a state of recovery, but one of great delicacy, in which the body is generally weak, and in which particular parts are usually predisposed, so that general and local impressions are liable to produce serious effects. Upon the whole, I have seen more deaths from relapses than from original attacks, partly owing to practitioners being thrown off their guard, and partly owing to the imprudence of patients at that period. I ascribe the causes of relapses to errors in the kind or quantity of the diet and drinks, to a low or a high temperature, to over exertion of body, to disturbance of mind, or to neglect of bowels, which might be certainly avoided by gradually recruiting the strength and avoiding the remote occasions from which they arise.

LECTURE XXXII.

CHRONIC AFFECTIONS OF THE BRAIN AND NERVOUS SYSTEM.

All the remote occasions of chronic affections may be ranged under three heads: inherent occasions, external occasions, and certain errors of ingesta; and the pathological conditions of chronic affections, like those of acute or sub-acute ones, are few and simple, however complicated, at first sight, might be the various symptoms by which the existence of those conditions are indicated. So intimate, are the relations between acute

and chronic affections, that the practitioner who the most distinctly understands the nature and treatment of the first class will be the most likely to have most correct notions of the second class; some of which, however, cannot be explained by a reference to the doctrine of congestion, simple excitement, or inflammation, though one or the other of these conditions is indisputably connected with a large majority of chronic affections.

CHRONIC INFLAMMATION OF THE BRAIN, OR ITS MEMBRANES, WITH SOFTENING OF THE SUBSTANCE OF THE BRAIN.

Chronic inflammation of the brain, or its membranes, is much more common after than before forty years of age, though I have seen several cases occurring in young persons. The causes which most frequently excite it are mental anxiety or over excitement, the free use of strong wines or liquors, repeated night-watching, great bodily exertion, irregularity of meals, and licentious passions; but sometimes it is the consequence of an acute inflammation, and occasionally it arises insidiously from blows on the head, especially when the diets or drinks have been disregarded for some time after such an injury. Some persons are more prone hereditarily to it than others, but a disposition to it is often laid, in advanced life, by an earthy deposit on the arteries within the head, a condition of vessels at least with which it is often connected. Chronic inflammation of the brain, or the membranes of the brain, is announced by pain in the head, which the patient generally refers to some particular spot. This pain is mostly continued, but in some cases it is only occasional in the commencement. It generally occupies a larger space when the membranes of the brain are chronically inflamed than when the substance of the brain is inflamed, After this pain has remained for some time the patient becomes liable to pains about the neck, scapula, arms, or legs, so that the patient often supposes himself to be rheumatic; but these pains differ from those of rheumatism, in as much as they are not attended by any swelling. This is a very important point to remember, for chronic inflammation of the brain, or membranes,

is overlooked by practitioners, under the supposition, that the pains and affections were altogether rheumatic, an error which has led to fatal results. When these pains have continued for some time the patient usually complains of creeping sensations, and then of numbness in the parts affected, which, after that period, gradually, for the most part, but sometimes suddenly, lose their power under the form of palsy; but long before the latter disorder occurs, the mind becomes depressed or irritable, and some of the external senses, especially the sight, are apt to be disturbed in their functions. Giddiness is a very common symptom in the progress of the complaint, under which the stomach is generally disordered, the bowels torpid, and the bladder either irritable or torpid. This affection terminates in palsy, in apoplexy, in low fever, or in some forms of madness.

On examining the brain after death, the membranes are mostly found more or less inflamed, and a portion of the brain is broken down, softened so as to resemble custard pudding or pulp. This softening is generally the gradual consequence of a primary local inflammation, but I have occasionally found it a secondary one from an effusion of blood, or from an organic tumour. It is of the utmost consequence to be well acquainted with the symptoms which attend the first stage of inflammation of the brain, that which sometimes exists many days, weeks, or even months before the softening occurs as the ultimate effect. The pain in a particular part of the head, the pains resembling rheumatism in other parts of the body, depression or irritability of mind, giddiness, some visual weakness or disturbance, and creeping sensations or numbness, are diagnostic signs of that stage, when palsy has actually taken place, or when the functions of the mind have become decidedly disturbed, that the softening process has generally taken place, though a few cases have done well even after palsy had happened in the tongue, hand, or leg, but such instances are rather an exception to a general fact.

In the first stage of the disease, blood-letting, mild aperients, a spare diet, rest of body, with quietude of mind, as far as the abstraction of all depressing and exciting occasions can be withdrawn. Nothing can be done in the advanced stage, when

the disorganization has actually taken place, but to palliate the symptoms by removing all opposing circumstances, such as errors in the regimenial and mental management of the sick. ROSTANS able work on this subject I strongly recommend, as containing an excellent account of a disease which is very common in this country, and but little understood by the generality of medical men.

INFLAMMATION OF THE INTERNAL EAR, AFFECTING THE MEMBRANES OF THE BRAIN AND THE BRAIN ITSELF.

Inflammation of the internal ear sometimes spreads to the membranes of the brain, and even the brain itself, occasioning inflammation in both those parts. This affection, most frequently arises from an inflammation of the fauces, extending itself along the eustachian tube into the internal ear, which is most liable to happen in bad cases of scarlet fever, measles, or small pox, or common chronic ulcerated sore-throat, but the inflammation occasionally commences in the lining of the external ear, and finally, from that quarter, invades the internal one, and ultimately reaches the brain. In such cases, the skin and mucous membrane of the intestinal canal are out of order, and, by consequence, the inflammation puts on an ill-conditioned character; the petrous portion of the temporal bone becomes carious, the dura mater is at length affected, and finally the brain. If such cases be misunderstood, or mismanaged, this is often the fatal result; but when they are clearly understood and well managed, they are often arrested in their progress, the patient's sufferings shortened, and his life saved. As this inflammation is generally maintained by a disordered condition of the skin and internal mucous tissue, the main object is to restore that to a healthy condition, by a simple diet, by the use of the tepid bath, by a fresh atmosphere, by early hours as to sleep, and a train of temperate and regular habits, aided by small doses of alkalies and an occasional mild aperient, where the bowels are not regular. Sometimes evacuations by the lancet or leeches are necessary, when the inflammation runs high, but this step is seldom requisite when the regimenial and mental management is judicious.

APOPLEXY.

Apoplexy is occasionally the sequel of softening of the brain, but it is far more frequently the product of simple turgescence of that organ, often favoured by that tender condition of the vessels inside the head, which is so commonly found in those who die apoplectic, and which is the result of an earthy deposit between the coats of the arteries. A learned and excellent person has written a work on apoplexy, in which he has given the opinions of almost all authors on the subject, and like them, he has come directly to the symptoms of the attack itself, as if it were not only sudden but unpreceded by any warnings. But the truth is, that generally, the attack is distinctly announced for several days, and sometimes weeks, and this is a fact most important to be known, as the attack itself may commonly be warded off by acting on a right knowledge of the premonitory indications. The indications usually are,—fulness, weight, tightness, heaviness, pain within the head or giddiness, weakness of sight, or some other defect, noise in the ears, coldness or numbness in some of the extremities, depression of spirits, a fearfulness or confusion of mind, palpitation of the heart, nervousness, and oppression about the precordia.

When the attack arises from depression, the skin is cold and the pulse small and feeble; but when the attack arises from excitement, the skin is hot and the pulse expanded and strong. An intermediate variety also exists, in which the temperature is nearly natural, and in which the pulse is flagging and oppressed, as if by a load. These distinctions are important in a practical point of view. When the skin is universally cold, when the pulse is thready and the respiration weak, the use of the hot air bath to the surface, and of some diffusible stimulus to the stomach, should precede the employment of the lancet; but in the two other cases, when the skin is hot and the pulse expanded, or when the temperature of the skin is nearly natural and the pulse flagging, blood-letting should at once be boldly adopted, to the relief, if possible, of all the urgent symptoms. Most sudden deaths depend not on apoplexy, but on diseases of the heart, for

in apoplexy patients generally survive the attack several hours, or sometimes even days, except in those cases where the rupture takes place extensively in the *cerebellum*, and then the death is almost always very sudden. The necessity of preventing the attack in those cases where fulness of the brain announces its approach is obvious ; for this purpose, I recommend blood-letting, purgatives, and a strictly abstemious diet; the efficacy of the last, and of the great utility of the abstraction of all diffusible stimuli is acknowledged.

PALSY

Arises, first, from an affection of the brain ; secondly, from an affection of the spinal cord ; and thirdly, from an affection of some particular nerve. When palsy arises from an affection of the brain, that affection may be various; sometimes it is softened from chronic inflammation, and then the palsy is preceded by pains, creeping, and numbness in the part, the palsy then comes on gradually ; whereas, when it arises from simple turgescence of the brain, it is preceded by signs similar to those which preceded apoplexy, and the attack at last comes not gradually but suddenly. The affection of the brain in either case is generally opposite to that side of the body which is affected, and is denominated hemiplegia. Sometimes palsy arises from great exhaustion, and the patient falls into syncope, on the recovery from which the tongue, or one side, is left paralytic. I caution students against allowing patients to get up again into the erect position, whenever they have complained of dimness of sight, giddiness, sickness or faintness. I have seen similar cases occur from patients having been retained too long in the erect position after copious losses of blood. This form of palsy is generally connected with an effusion within the head, and apparently arises from the colapse of the heart, the venous blood, meanwhile, being impeded in its return from the brain. Paraplegia, or an affection of one half of the body transversely, sometimes depends upon an affection of the brain, but it is more frequently the effect of softening of some portion of the spinal cord, and that again is the effect of chronic inflammation of that part. Chronic inflammation of the spinal cord, or its membranes,

may exist in the cervical dorsal, or lumbar portion. It is denoted by pain in the part affected, by wandering pains and then numbness, or tingling down the upper or lower extremities, or through the muscles of the trunk, followed by loss of power in the upper or in the lower extremities, according to the seat of the chronic inflammation. There is an affection of the spinal column itself, which POTT has well described, and which, arising commonly as a secondary affection of some disorder of the primæ viæ, generally attacks the bodies of the vertebræ, so that in process of time a curve outward was the consequence, with weakness and at length loss of power in the upper or lower extremities, according as the affection happenes to be seated in the upper or lower portion of the spinal column. The partial palsy which arises from an affection of a particular nerve is also various as to its origin, for sometimes the cause is a tumour in the course of a nerve, or some similar pressure, and sometimes it is simple inflammation of a nerve. With respect to the treatment of palsy, it consists, first in the prevention; secondly, in the removal; and thirdly, in the palliation. When palsy is preceded by chronic inflammation of the brain, or its membranes, the removal of that inflammation, before softening occurs, will prevent the attack, and when it is preceded by simple turgescence of the brain a similar plan will be alike successful. When the attack has once decidedly taken place, the recovery is always doubtful, where the head is concerned; but I have seen several cases in which patients have recovered the use of the affected limb by perseverance in an abstemious diet, occasional blood-letting, local or general, and mild aperient medicines. When inflammation of the spinal cord precedes the seizure, the prevention depends upon the ordinary measures; and when the attack has occurred from that cause, still the treatment should be of a subdued anti-phlogistic kind. But when the palsy depends upon a disease of the bones of the spinal column itself, then rest in the recumbent posture, a fresh atmosphere, a regulated diet, and an occasional gentle alterative and aperient, with perfect cleanliness, are the most efficacious measures. The value of these are indisputable, whereas the use of caustic issues

are doubtful, some having much, and others no faith in them at all. In truth, this affection being generally a secondary one of some irritation on the mucous surface of the primæ viæ, the cure depends more upon the removal of that, and upon taking off the weight of the trunk through rest, than upon any other means. The partial palsy is to be relieved by the removal of its cause, only it is to be remembered, that partial palsy does not always depend upon a mere local affection of a nerve, but is more often the effect of some serious affection of the brain, of which it is a monitor not to be neglected for a moment in many cases. The history of every instance, therefore, should be minutely investigated, by a reference to the physiology of the parts concerned, so that the cause may, if possible, be correctly ascertained, and a corresponding treatment pursued. No folly is greater than that of supposing the same name always implies the same conditions, for the symptoms on which that name is founded may be similar, yet the condition on which that symptom depends may have a different seat and character.

Paralytic affections from the brain are far more common among those who take wine and ardent spirits than among those who drink nothing but water; yet many other remote occasions, and especially mental excitement, is connected with the origin of such complaints, which are therefore more common in large towns than in the country, where the mind is less agitated in the main.

EPILEPSY.

I distinguish two modifications of epilepsy, one which arises in children, and which is connected with irritation of the mucous membrane of the intestines; and another which arises in adults, and which is connected originally with an affection of the brain. That which takes place in children can generally be cured by a strict regulation of diet, by mild aperients, with small doses of alkalies, and by an alterative now and then, when there is a deficiency of bile. But that which occurs in adults is far more difficult to manage, though sometimes it admits of a cure, but more often only of palliation. Whatever exhausts or excites epileptic adults does harm, and therefore copious evacuations on the one hand,

and stimulants on the other, are to be avoided. That diet is best which supports the strength without producing any excitement, or without disturbing the stomach. I have seen medicines tried, but none very beneficial, except the arsenical solution, which, in some instances, has arrested, and in others mitigated the disorder, where the diet has been rightly managed, and when the mind has been kept tranquil, the last of which is an essential point towards insuring success.

I knew of a female subject of epilepsy, in whom the fit occurred very repeatedly while she was harassed by an ill-tempered person, but who got entirely rid of the disease when she was placed in a comfortable situation. Some cases which occur from hard drinking, and some from the indulgence of licentious passions, have in like manner been removed by the removal of the exciting cause. In regard to the morbid anatomy of epilepsy, it has been extremely unsatisfactory to me; the appearances have been so different in different cases, that, with the exception of congestion or effusion, I have not been enabled to come to any satisfactory conclusion as to the pathological condition from which epilepsy arises.

TETANUS.

Tetanus is either idiopathic, or symptomatic. It is idiopathic when it appears independently of any local injury, as from cold; it is symptomatic when it follows a local injury, such as a punctured or a lacerated wound about the hands or feet. But it is clear, that, whether idiopathic or symptomatic, some concurring state of the system must exist to favour the rise of tetanus, since cold applied, or since a local injury sustained under ordinary circumstances, does not give rise to this affection. Many years ago the negro infants died of locked jaw in Jamaica, on the plantation where an acquaintance of mine practised, in such numbers, that an inquiry was instituted as to the cause of death. It was found, that owing to some superstition, the breast had not been given at the natural period, that the meconium for the same cause had not been purged off, and that, moreover the food was crude, and the air of the apartments close. On correcting

these improprieties, the tetanus disappeared, which clearly showed, that some constitutional disturbance had been generated by that of the primæ viæ, which concurring with the irritation at the navel, had brought on the attack. It is important to avoid all the sources of intestinal and other irritation, after any suspicious injury, a remarkable fact, that by such a procedure, and the application of the rectified oil of turpentine, under the form of an unguent, an experienced friend has warded off many attacks of tetanus, which have been very common in his practice at Grenada, before he adopted these precautionary measures. When tetanus merely attacks the muscles about the neck and jaw, it is often recoverable, but when the other muscles are also affected, it is a most formidable affection. The morbid anatomy is various, but the brain is mostly somewhere discoloured, with congestion of the lungs and mucous internal membranes, probably in part the effect of the convulsive pressure of the muscles on the external veins, as happens in hunted animals. —Those patients have the best chance of recovery, who are mildly treated, and nursed, as it were, through the disease. In illustration of this, I mention the result of the experience of two of my friends who have practised extensively in tropical climates, both of whom have been more than commonly successful by doing less than has been usually done in such cases. Their plan was moderate and repeated doses of opium, occasionally laxative enema, light nutriment, and stimulating friction in the course of the spine, together with every attention to the state of the mind, allaying apprehensions and inspiring confidence in the remedies employed. One case has recovered, under my own care, from a milder mode of treatment than that usually adopted in this country; but, as in the present state of knowledge, a large majority of cases are mortal, endeavour to prevent the occurrence of the attack, by studiously avoiding all causes of irritation after an accident.

CHOREA.

Chorea originates in irritation of the mucous membrane of the stomach, or small intestines, together with a disordered condition

of skin, and a consequent torpid or irregular state of the liver and colon. In the progress of the complaint, the spinal cord and brain become distended, so as to affect the motion, and at last the intellect. The laxative plan recommended by Dr. HAMILTON, senior, I have never known to fail, except in two cases, where the aperients were mild, occasionally conjoined with an alterative, where the diet was at the same time properly regulated, and the functions of the skin restored by a tepid shower bath, and the influence of a fresh atmosphere. There was a curious case, in which not only purgatives, but the arsenical solution, the sulphate of zinc, and various other measures failed, but in which music had the effect of procuring sleep daily, and at last of removing the disorder altogether. Be cautious against the free use of the lancet, as there have been cases in which it nearly proved fatal; but I have seen moderate leeching useful in some cases where the intestinal lining was distinctly in a very irritable condition. It is of great consequence in this and many other nervous affections, not to direct the attention of the patient's mind to the complaint, for it is thereby apt to be greatly increased, as any one may easily perceive, when they make many inquiries in succession as to the motions. The cure of complaint can seldom be accomplished under any plan in less than about six weeks or two months, and if the diet is neglected, it will generally continue much longer.

HYSTERIA.

The foundation of hysteria is laid in an excess of sensibility, sometimes associated with local irritation, especially about the mucus membrane of the intestinal canal, or the mucus lining of the uterus, the latter being an affection much more common than medical authors have supposed. In the prevention and cure of hysteria, it is of the utmost consequence to bear the two forementioned circumstances in view, for by lessening the general sensibility, and removing the local irritation, this affection, when not associated with any other, may be readily removed. The most common exciting cause of hysteria is some strong mental emotion, and the affection is often protracted day after day,

week after week, by the sympathy of attendant friends, which is the very food of hysteria. Several cases I have removed merely by attending to the mental management. One case in particular, where the patient had been ill for upwards of two months, the hysteria in that time having assumed various forms, and having at last put on a violent convulsive character, which so alarmed the friends, and even the medical attendants, that she was watched day and night by three or four attendants. I removed those attendants, placed an old nurse by the bed side, and told her not to take the least notice of the patient whatever might happen. Shortly after, a strong convulsive fit occurred, so that the patient tumbled out of bed upon the carpet. The old nurse let her lie, and when she had recovered from it, rebuked her for being so foolish as to give way to such fantastic fits. The patient had no return of the affection, and the father was so much surprised, that he said, if any mystery had been used, the case might have been deemed miraculous. There are many similar cases, which must be familiar to all observant practitioners, and which show how easy it may be to deceive the public by operating through the medium of the mind, if men be disposed to play such a part as the impious impostor Prince Hohenloe, whose monkish pretensions have made such a noise amongst the ignorant. With respect to any medical treatment, it should consist entirely in the removal of any local irritation which may exist, which, however, should be done by the mildest measures, as hysterical women seldom bare copious evacuations without an increase of that sensibility upon which the affection mainly depends. Exercise in the open air, a simple diet, early hours as to sleep, a due attention to the bowels, and a right regulation of the mind, are the best means of preventing a return of the affection, together with an avoidance of that open and declared sympathy on the part of friends, by which it is so frequently supported. At the same time, when a medical man recommends this plan, he should clearly explain his motives to the attendants, otherwise his conduct might seem harsh, however humane it is in reality.

HYPOCHONDRIASIS.

Hypochondriasis, mentally considered, may be distinguished

by an exclusive and selfish attention to the personal feelings, so earnest and undivided, as to be very apparent on the first interview with the hypochondriac. To this state of the feelings some persons are strongly disposed by original structure, but it is frequently acquired. Sometimes it is associated with that general disturbance of the nervous system which is so apt to be induced, in sensitive frames, by the worry of the world; sometimes it is connected with local irritation, especially of the mucus membrane of the stomach, accompanied by an overloaded colon; and sometimes it is produced by men taking an erroneous view of their own case, supposing it to be really serious, a circumstance very common amongst medical men, when their strength happens to be broken up, and when, at the same time, occasions arise to make the mind anxious. In some instances hypochondriasis is connected with organic affections, but this mostly happens in old persons, and seldom occurs at an early age, the looks of the hypochondriac often belying the woeful tale which he so repeatedly relates. The cure of hypochondriasis is to be accomplished by rightly managing the mind of the patient, and by removing, by mild means, any bodily irritation which exists. Never indulge such patients in wishes to take a great deal of medicine, but appeal to their common sense, so that they may, at the commencement, withdraw the mind from the contemplation of themselves, and fix it upon some external object with interest sufficiently intense, as a diversion from the distemper. Few persons who take regular exercise in the open air, who moderate their wishes, and who endeavour to live for others rather than themselves, become the decided subjects of hypochondriasis.

When illusions occur in hypochondriasis, it no longer deserves the name, being then a modification of mania.

NERVOUSNESS.

There is, probably, such a condition as general nervousness, without its being referrible to the existence of any particular local affection of the nervous system. Such as that induced in some persons by copious losses of blood, or by want of sleep, in which a pulsation is perceptible in almost every artery of the body,

accompanied by great excess of sensibility. This condition is best removed by passive exercise in the open air, by a tepid shower bath, by a light nutritious diet, and by a very moderate allowance of wine, or some other diffusible stimulus, and the occasional exhibition of an anodyne and laxative. But as nervous sensations are frequently mixed up with serious affections of the brain, heart, stomach, liver, or intestines, so a medical man should be most assiduous in his examinations, lest he should overlook them, and put the patient upon a treatment the reverse of that which ought to be adopted. Be most guarded in the use of language, since in medicine mere sound is often substituted for science, with which many of the profession and of the public are alike deceived.

LECTURE XXXIII.

CHRONIC AFFECTIONS OF THE FAUCES, AIR PASSAGES, LUNGS, AND HEART.

CHRONIC inflammation about the tonsils and mucous membrane adjacent, is a very common occurrence; it is not, however, generally a mere local affection, but connected mostly with a faded appearance of the skin, and an irritable condition of the internal mucous membranes, especially of the stomach or small intestines, of which, indeed, it forms a part. Hence this is a very common disorder among those medical students who have fagged hard towards the close of the session. It is to be considered, in such and in almost all other cases, as one of the first indications of an approaching break up of the general strength, and therefore requires greater attention than a superficial pathologist might suppose. This chronic inflammation sometimes precedes an acute or sub-acute attack, but it more often continues under its original character, being sometimes accompanied by relaxation or elongation of the uvula, and sometimes by ulceration, with or without the forementioned state of the uvula. As to the diagnosis between this affection attended by common ulceration and that which is connected with syphilis—there

are two ulcerations of the throat, both of a syphilitic nature, one superficial and spreading, surrounded by a copper-coloured inflammation, another deep, as if a portion of the part had been cut or dug out, attended by the same sort of dark inflammation, and usually by some cutaneous affection; but when any doubt remains, the history of the case should be traced backward, as in syphilis, the primary symptoms always precede the secondary, or those of soft parts, as the secondary always precede the ternary, or those of the hard parts. The case of common chronic inflammation of the fauces is to be affected, first, by those means which tend to remove the local inflammation there, and secondly, by those which tend to restore the skin and internal mucous membranes to a healthy state. Leeches should be applied occasionally to the throat, in conjunction with very mild aperient medicines when the bowels are constipated; but the greatest advantage is to be derived from placing the patient in a fresh atmosphere, occasionally using a tepid bath, adopting a regulated diet, and removing all opposing circumstances, such as over exertion of mind, and the like. In regard to the diet, three simple meals in the day are generally sufficient, a small quantity of animal food may be allowed for dinner, with a single glass of wine, when the fever is absent, and when there is no actual sign of chronic inflammation on the inner surface of the stomach or intestines; but where such an inflammation is existing, or where any degree of fever is present, then animal food should be wholly omitted, and a diet, partly of milk whey and partly of farinaceous articles, ought to be substituted.

CHRONIC INFLAMMATION OF THE LARYNX.

Chronic inflammation of the larynx is sometimes the sequel of an acute or sub-acute attack, but much more frequently it is a mere extension of the chronic form of inflammation just described about the fauces, the mucous membrane of both being continuous, along which it is, therefore, apt to spread in protracted cases. Chronic inflammation of the larynx, is usually denoted by hoarseness of the voice, by a frequent hem! to clear the throat, by a sense of soreness about the larynx, and by a

peculiar noise when the patient coughs out, referrible to that of the wind-pipe. At first the expectoration is mucous, but in its progress it becomes purulent, and a slow consuming fever attends the ulceration of the larynx which then occurs, and which is always conjoined with the purulent expectoration. In the first stage of this affection, in that of simple inflammation without ulceration, I recommend local bleeding by leeches, mild aperients, nauseating doses of ipecacuanha occasionally, a bland diet, the tepid bath, and a regulated temperature, ranging from about sixty-four to sixty-eight, or seventy, of Fahrenheit's scale. But when ulceration has actually occurred, the nauseating doses of ipecacuanha should be omitted, and a similar plan in other respects be pursued, aided by the inhalation of the vapour of tar, from which I have seen remarkably good effects in some cases. One surgeon has been successful by washing the epiglottis and adjacent parts with a solution of the nitrate of silver ; but I have only seen this bold practice pursued in one case, and it gave less relief than had been anticipated in ulceration of the larynx. When the ulceration is syphilitic in its origin and progress, then the appropriate remedy ought to be cautiously used ; but in every case the condition of the skin and internal mucous membrane should be assiduously regarded at the same time, since a morbid condition of those parts is invariably associated with chronic inflammation and ulceration of the larynx.

CHRONIC INFLAMMATION OF THE BRONCHIA.

Chronic inflammation of the mucous membrane of the bronchia is exceedingly frequent in this variable climate. Sometimes it is connected with chronic irritation of the mucous membrane of the primæ viæ, or urinary organs, with a harsh or disordered condition of the skin, but in many cases it exists without such a conjunction. It is denoted by dusky lips, by a deep stuffing cough attended by a loose diffused noise, by a copious expectoration, mostly of opaque mucus, especially in the mornings, and by difficulty of breathing, increased by exercise. The natural cure is by expectoration, but this affection sometimes leads to chronic hepatization of the lungs, and sometimes it excites

tubercular consumption, particularly when it is prolonged in young and delicate subjects. Chronic inflammation of the mucous membrane of the bronchia is most effectually removed, or relieved, by those measures which act simultaneously on the bowels and the skin; hence I have found mild aperients and sudorifics, with a regulated diet, answer the best; but sponging the surface, first with tepid and then with cool salt water, is one of the most useful preventives of a return of this affection. In those cases, however, where it is conjoined with a disturbed state of the skin and mucous membrane of the primæ viæ, more will depend upon the right management of the clothing and the diet than upon mere medical prescription. This affection has been called by various names when it occurs amongst old persons, such as catarrhus senilis and humoral asthma; but the word asthma ought only to be applied to an affection which returns at certain intervals, and which has at those times a spasmodic character.

SPASMODIC ASTHMA.

Spasmodic asthma occurs by fits, at all times in the year, and very frequently in the summer. In some persons it is excited by disagreeable odours, or even by pleasant, such as hay, and hence it has been denominated, by country people, the hay asthma. Some patients liable to this affection are remarkably influenced by locality. One, for example, cannot come into London without having an attack, which is as speedily removed by going to a place only perhaps a few miles distant; another cannot live long many miles distant from the sea without having a fit, which goes off as soon as he again approaches the sea. Some can only reside comfortably in high situations, while others again only remain easy in low situations. The attack most frequently comes on towards morning, and is attended by a dryness about the nostrils, by coldness of the skin, and by great difficulty of breathing, so that the ribs are elevated, and the patient requires a constant supply of fresh air from without. Some heat of the surface usually supervenes, the pulse becomes quicker than natural, and at length a copious secretion takes

place from the mucous membrane of the bronchia, which being coughed up, the fit gradually, and at last, for the most part, entirely abates, but is again renewed at certain or uncertain periods of time. This affection, in its origin, is connected with the skin and mucous membrane of the bronchia, and the spasmodic affection is merely a secondary one; but in the progress of what is called spasmodic asthma, the heart or larger adjacent vessels always become diseased, at least this is invariably found to be the case in those instances where I have seen bodies examined after death. Much mischief hast been done by those empirical attempts which have been made to cure spasmodic asthma, without a reference to its pathological peculiarities, and this has especially happened in regard to the application of the galvanic or electric fluid, which I have seen used when a concomitant organic affection of the heart, or large adjacent vessels, clearly contra-indicated its application to those who are acquainted with modern pathology. The great use of correct principles of pathology, is, that they show what is impossible as well as what is possible, and consequently prevent the profession from making a series of harsh experiments, by which the sufferings of patients are increased and their lives shortened. The most important point at an early period of spasmodic asthma, is to find out a place most suitable for the patient, when his pecuniary circumstances admit such an undertaking, and he should remain quietly there, properly managing his diet, his clothing, and his exercise. During the attack, when the excitement is once developed, it requires to be treated on the same principles as has been recommended for chronic bronchitis; and when from its long continuance it is conjoined with an affection of the heart or large adjacent vessels, then a still mode of existence is most likely to lengthen the patient's life.

CHRONIC INFLAMMATION OF THE SUBSTANCE OF THE LUNGS.

Chronic inflammation of the substance of the lungs frequently arises and terminates usually either by hepatization of the lung, or by chronic ill-conditioned abscesses of the lung. In the first stage, it is denoted by a hard, harsh, grating sort of cough, the

noise of which is limited, as it were, to a circumscribed space of the chest. On the application of LAENNEC's instrument over the part, the respiratory murmur is either not heard at all or it is very indistinct. The expectoration is scanty and tenacious, in small patches of mostly yellowish mucus for some time; the pulse is flagging, the respiration heavier or more oppressed than natural, but though the patient coughs, yet in such examples pain is often absent. Where the hepatization takes place extensively, the breathing becomes more and more oppressed, till at last it is exceedingly difficult; but where suppuration occurs, the patient expectorates pus, and the case goes on much in the same manner as tubercular phthisis. But the anatomical difference between these affections is this, that in vomicæ from common chronic inflammation no tubercles are found in the lungs. This is a distinction which even the accurate Laennec has overlooked, for I consider the most of those cases which Laennec has designated by a simple infiltration of what I call tubercular matter as occurring from common chronic inflammation in the substance of the lung, so modified by the condition of the patient that the pus assumes the curdly or ill-conditioned character.

In the first stage of chronic inflammation of the substance of the lungs, I advise blood-letting, rest in bed, a spare diet, and aperients; and when the affection is attended by suppuration, rest in bed, a regulated temperature, an abstemious diet, together with the use of digitalis, so as to reduce the pulse to the natural standard.

PULMONARY CONSUMPTION.

Pulmonary consumption is most common in individuals under twenty-five years of age, but I have seen many cases between that age and thirty-five, and several at a much later period of life than the last-mentioned. I consider the delicacy of young persons as the cause by which they are most predisposed; and two circumstances are almost always found to concur in the production of pulmonary consumption, namely, a breaking up or giving way of the general strength, and the application of what is called cold, under that condition of the body. I could adduce several cases

in proof of this assertion, some of which arose from copious blood-letting, some from spare diet, some from mental anxiety, some from over-exertion, some from night-watching, some from disorders which interrupted the digestion, and others from the like occasions. The same reasoning is applicable to the production of the disease in the lower animals, for sheep, young horses, and rabbits, being badly fed and exposed to cold at the same time, are apt to become consumptive. This view of the subject is of the highest importance to society in a preventive point of view, and especially to those families in which the tendency to consumption hereditarily prevails; for I contend that this complaint may be prevented in such families by maintaining the general strength through a nutritious diet and other regimenial points, and by giving tone to the surface of the body, first by tepid and next by cool sponging or ablution; but in this variable climate the use of thin flannel, even in the summer, and of fleecy hosiery in the winter and spring, next the surface, where the least suspicion of, or tendency to phthisis exist, is advisable. The developement of phthisis is always preceded by some change in the functions of the skin, which become more faded than natural, and by some consentaneous irritation of the internal mucous membranes, especially of the intestinal canal and of the bronchial passages; but the local irritation which precedes the attack is occasionally in the pleura or lungs.

Be cautious against the empirical use of mercury in the British metropolis for many supposed hepatic or duodenal affections. I am fully confident that by breaking up the general strength, and disordering the functions of the skin, it is a very common cause of inducing phthisis, aided by the operation of our changeable climate. The first indication of approaching phthisis will generally be found in a preternaturally delicate hue of the skin, attended by a slight cough, loss of flesh, some diminution of strength, some degree of shortness of breathing on taking exercise, a pulse somewhat accelerated, with a bright or glossy appearance of the eye. The cough gradually increases, the patient becomes liable to slight chills occasionally, the skin grows more delicate, the eye even brighter, the nights less tranquil, and perspirations appear

towards morning; while an insidious fever, which at lengsh puts on the hectic character, and evidently attends the progress of the complaint. Though the expectoration has for some time been merely mucous, about this period it becomes purulent and peculiar. It is generally spit up in small patches, which float in water, something like a cockle, while the air-bubbles in it are entire; but when they burst it sinks to the bottom, and between it and the surface some small opaque points, like pins' heads, are to be seen floating in the fluid. The patch itself, when examined, generally consists of three things, first of mucus, secondly of a little loose pus, and thirdly of curdly streaky white matter, which is coagulable lymph of an ill-conditioned kind. This conjunction is characteristic of tubercular phthisis, with the single exception, that I have found the same sort of expectoration from common ill-conditioned ulceration of the lungs before described. When the hectic is once established, pulmonary consumption goes on progressively, terminating more rapidly in young than in old persons, except the latter are very much emaciated at the time of the attack, and then the disorder in them sometimes takes a very rapid course indeed. The immediate cause of consumption is the formation and developement of what are called tubercles in the lungs. The tubercles are sometimes implanted like seeds, hereditarily in the lungs, and are not actively developed till the causes concur which were before specified; but in the greater number of instances are tubercles actually formed *de novo* by breaking up the general strength, which tends to that morbid condition of the skin and mucous membranes so favourable to the operation of cold in producing tubercles in the lungs, or other parts of the body. In confirmation of this view, I have, in examinations after death, generally found tubercles in the bodies of those childreen who have become emaciate in London from improper food, confinement, and cold. Some parts of the French pathology, much as I admire the minuteness with which the physicians of that country record symptoms and make dissections, it nevertheless appears to me that there is one very great defect, namely, that they come to the ultimate effect, too fre-frequently, without a sufficient consideration of the circumstances

which preceded that effect. A grievous mistake of that kind, has been committed by LAENNEC, who, for instance, fixed the attention at once upon the actually existent tubercles, not being aware of those circumstances by which they were either actively developed, or really formed *ab origine*. The practical mischief of such a pathology is great, because it leads to entire neglect of those means by which consumption and other tubercular affections may be generally prevented from occurring at all.

The prevention, then, of consumption is the first consideration, and that is to be effected by the measures to which I have already alluded. When consumptiou is threatened, while the tubercles are yet in a miliary state, on becoming crude or enlarged, the affection at that early period, may very frequently be arrested by rest in the recumbent posture, by a regulated temperature, by a milk and farinaceous diet, by an occasional mild aperient, and by the exhibition of digitalis, to reduce the pulse to a natural standard, and keep it there for some time. With regard to the confirmed stage of consumption, when the tubercles have become softened, when the expectoration bears the peculiar character before described, and when the hectic has become marked, there is reason to conclude, that the affection will be most frequently fatal under every mode of treatment; yet, within the last six years I have attended several of such cases, some of which have done well by a strict and persevering combination of the means before named as appropriate to the first stage, sometimes aided by the tepid or cool ablutions. The efficacy does not lie in any one of these measures singly employed, but in the diligent conjunction of the whole.

In the last stage of phthisis, chronic inflammation of the mucous membrane of the lower part of the ilium, and of the upper part of the colon, almost invariably takes place, and in fatal cases is generally conjoined with ulceration. Even the simple inflammation sometimes is aggravated then by the digitalis, unless combined with a little laudanum, which usually prevents it from exciting or increasing any intestinal irritation. This inflammation and subsequent ulceration is the cause of the colliquative diarrhœa which takes place towards the close of phthisis, and which is best

obviated by occasional leeching over the abdomen, by a proper diet, and by minute doses of cold-drawn castor oil, combined with a little opium.

Scrofula in general is considered first to consist in the formation of tubercles, and secondly in ill-conditioned inflammation, which may take place without any tubercles at all. Tubercles sometimes arise independently of inflammation, but inflammation in any adjacent structure is sometimes the cause of exciting them, such as inflammation of the bronchial or intestinal lining, particularly where the general strength has been greatly reduced at an early age. Tubercles, in their origin, are sometimes vesicular, as may be easily seen, by examining them through a good glass; but this is not always the case; sometimes they are found solid and opaque, when they are merely minute points. I consider the miliary tubercle, as LAENNEC has done, the seed or embryo of the crude tubercle, and suspect that the latter is softened by an inflammatory process. The ill-conditioned inflammation, which is imperfect in all its stages, and which is one modification of what is so vaguely termed scrofula, chiefly owes its character either to hereditary or to acquired delicacy of the system, and frequently loses that character by restoring the general health, through the removal of whatever local affections may exist, and these local affections are most frequently to be found in some faultiness of the surface and internal mucous membranes.

CHRONIC AFFECTIONS OF THE HEART.

Chronic affections of the heart, like most others, may be divided into disorders and diseases. In disorders of the heart, its actions are merely disturbed, while its structure remains entire; but in diseases of the heart, something is superadded to, or taken away from, its natural structure.

CHRONIC DISORDERS OF THE HEART.

Most of the chronic disorders of the heart proceed from excitement or depression, through mental emotions, great exercise, from copious losses of blood, from the long continued stimulation of mercury, or from disorder of the stomach, liver, or

bowels. By mental emotions, or great exercise, the heart's action is frequently preter-naturally excited or depressed, and sometimes rendered irregular; by copious losses of blood, increased action and palpitation are very apt to be produced; by mercury, carried to ptyalism, its action is often excessively augmented; but in some instances it is depressed and irregular. By far the most common cause, however, of affecting the heart's action is some disorder of the stomach, liver, or bowels. Disorder of the stomach affects the heart's action in four ways; sometimes it instantly suspends it; sometimes it greatly oppresses it, sometimes it renders it intermittent, and sometimes it makes it inordinate, so that the beats are quick at one time, and slow at another, or weak at one time, and strong at another. There have been several cases in illustration of each of these varieties, some arose from errors in the kind, others in the quantity of the diets or the drinks. In some of these instances, not only the respiration, but the brain is remarkably disturbed. I, therefore, caution you against pronouncing hasty opinions about the existence of organic affections of the heart, when the tongue is furred, and the functions of the stomach, liver, or bowels disordered. The cure of these examples is to be effected mainly by a proper regulation of the diet, and by mild aperients, with alkalies, where the stomach is the seat of the disturbance; but where the liver is torpid, the tepid bath, and an occasional mild alterative, are generally necessary, and when the colon is so overloaded as to occasion disturbance of the heart's action, then warm resinous purgatives, with cold-drawn castor oil, are generally the best remedies. But if disturbance of mind is connected with disorder of the heart's action, little good will be effected, unless that can be removed. When the affection has arisen from losses of blood, rest in a fresh atmosphere, a bland diet, with the employment of digitalis and opium, aided by a tepid or cool shower bath, are generally the best measures; and when the disturbance has been produced by mercury, if the heart's action is excited, rest, aperients, and a spare diet, are most to be depended upon; but in cases where the heart's action is depressed from mercury, then diffusible stimuli

and free ventilation are necessary, so long as the depression continues.

CHRONIC DISEASES OF THE HEART.

What has been denominated by HEBERDEN, who was a superficial pathologist, angina pectoris, cannot be properly considered as one affection, since it arises from various causes. The chief symptoms are, a sudden sense of anguish in the region of the heart, a sense of stricture, or suffocation in the chest, an irregular pulse, attended by general distress, and, finally, by a pain shooting from the region of the heart down the left arm. These symptoms might arise first from mere disorder of the stomach; secondly, from disease about the heart, or large adjunct vessels, and thirdly, from ossification of the coronary arteries; but the last mentioned cause is by far the most frequent. When this affection is merely functional, when it depends only upon disorder of the stomach, it will be removed with that disorder; but, when it is organic, nothing can be done but to palliate the symptoms, by the most assiduous attention to diet, to rest, and to the regulation of the mind. In most organic affections of the heart, patients must be contented to adopt a still mode of existence, and that, with a proper regimen in other respects, will not only protract their lives, but greatly diminish uneasiness.

SIMPLE ENLARGEMENT, WITHOUT DILATATION.

The auricles are not often thus affected. The muscular substance of the heart is redder than natural, and the ventricle loses in size what it gains in thickness. The patient is liable to palpitation and dyspnœa, there is a more constant sensation of the heart's action than natural, and often swelling and pulsation of the external jugular veins. If LAENNEC'S cylinder be applied, the impulse of the heart will be found stronger, and its sound duller.

ENLARGEMENT, WITH INCREASE OF THE CAVITIES.

This is generally called, but improperly active aneurism. The heart's action is much stronger and more extended than natural, the pulse is remarkably hard and resisting, like pack-cord, and

the patient is liable, especially on mental agitation, strong exercise, or disturbance of the stomach, to attacks of palpitation and dyspnœa. This affection often occurs in rheumatic subjects, and is sometimes connected with chronic inflammation of the pericardium, and sometimes with ossification of the valves.

DILATATION WITH THINNESS, AND OSSIFICATION OF THE VALVES.

Dilatation, with thinness, has been improperly called passive aneurism. The face is generally pale, the pulse feeble, and the patient is liable to palpitations, dyspnœa, and faintings, especially on taking exercise on uneven ground. On the application of the cylinder, there is less impulse than natural, with a clear and extended sound. Ossification of the valves may always be easily detected by the assistance of LAENNEC'S instrument, for the sound is of the whiz-gig kind, or like the compression of a pair of bellows, a sound entirely different from that which exists in a healthy condition of the valves; while dyspnœa on motion is almost always an attendant symptom. In all organic affections seated within the bag of the pericardium, the respiration is disturbed on motion, particularly on motion up stairs, or up a hill, and the respiration soon becomes comparatively easy when the patient sits down.

Study the phenomena of organic diseases of the heart attentively, since a knowledge of them will not only prevent you from making rash experiments, but enable you to render the patients much more comfortable, and also to lengthen their existence.

LECTURE XXXIV.

ON THOSE CHRONIC AFFECTIONS WHICH ARE COMMONLY CALLED DYSPEPSIA, DISORDERS OF THE DIGESTIVE ORGANS, AND INDIGESTION.

THERE is no subject in which the vagueness of medical language has been, and is still,so prejudicial, as that which forms the sub-

stance of the following lectures; for the words dyspepsia, disorder of the disgestive organs, and indigestion, are constantly in the mouths of practitioners, yet most attach to them no particular or precise opinions, but speculatively suppose that they imply one and the same condition of parts, and even that condition is not distinctly defined. CULLEN, in his Nosology, has used the word dyspepsia as expressive of a set of symptoms, but, in his usual superficial manner of proceeding, has made the definition only nominal, by having neither implied nor expressed any pathological state to which those symptoms could be referred; and, indeed, all that can be gathered from this author is, that they belonged to the class of Neuroses, which, in its turn, is an abstraction taken, not from pathological conditions, but from mere symptoms, or indications of disorder. The more fashionable words, disorder of the digestive organs, are employed in an equally desultory manner, for under these words many affections, discrepant in their seat and nature, and consequently requiring very different modes of treatment, have unquestionably been confounded. The speculative doctrine, or rather absurdity of disorder of the digestive organs, is carried so far in the British metropolis, that if a patient's tongue is furred, it is deemed quite sufficient, all further inquiry being so unnecessary, that the patient's mouth is closed if he attempts to enter upon the slightest history of his case, and forthwith the blue pill and flesh diet are prescribed, while the suffering individual, like Tantalus, has to be deprived of every thing like liquid, whatever might be his previous habits, or the present degree of his thirst. This medical bubble has grown to a large size, and has floated long, but surely it is about to burst, once for all, before the touch of modern pathology, which requires that general principles should be most deliberately deduced from an accurate observation of particular circumstances.

As to the term indigestion, it has been employed in an alostsimilarly desultory way, under the supposition, that it proceeds from a simple condition which could be remedied by some favourite nostrum of such admirable efficacy that it exactly suited all cases; but, the truth is, that this dyspepsia, this disorder of

the digestive organs, this indigestion, is not one affection, but many affections ; or, rather, it is the consequence of many different affections, to detect which requires that a man should come to the sick divested of all hypothesis, and investigating every case for itself, bring his general principles of pathology and practice to bear upon it with a due consideration of all its particular or peculiar circumstances. To take a right view of the subject, therefore, it is necessary to separate it into two parts, that each being distinctly exhibited, the whole may, at least, be clearly comprehended by the pupils. Before, however, proceeding to the subject, as connected with any primary disorder of the stomach, liver, or intestines, it is necessary to remind you, that chronic inflammation of the brain and spinal chord, before described, are so often attended by indigestion, that in every instance you should ascertain by inquiries, as before directed, whether or not these parts are the seat of the disturbance, recollecting, that it is often a guide in the investigation of diseases to find out, in the first place, what organs are not affected, since a pathologist is thus led to a true discovery at last. Independently of chronic inflammation of the brain, or spinal cord, many cases of indigestion are occasioned by impressions made upon the nervous system at large through excitements, depressions, and anxieties of mind alone, as all these ultimately tend to exhaust the energy of the body, and of the stomach in particular, so that it could not do its office perfectly. In proof of this position, I have often found indigestion proceeding from mental causes, frequently indeed, associated with some bad physical habits, such as deficiency or excess of bodily exercise, or some irregularity in the diets, in drinks, or in the sleep. Loss of appetite, capriciousness or defect of it, often arise in this manner, and unless the mind could be duly regulated, as well as other parts of the regimen, little or no good could be done by mere medical prescription. One general error in large towns is, that moderation is constantly violated in almost all things. Most things are in the extreme, and life is an intellectual or physical fever—a state of excitement and collapse. Of the various local affections connected with indigestion, I first notice a painful affection of the stomach, which I

have frequently seen arise, partly from over exertion of mind, and partly from the influence of that on the stomach, aided by some offending ingesta.

PAINFUL AFFECTION OF THE STOMACH FROM OFFENDING INGESTA.

This affection is most commonly induced by some offending ingesta, when the body has been weakened by mental or material causes. The pain generally comes on suddenly, and is extremely acute, being usually attended by a sense of commotion and distension of the stomach; sometimes nausea, retching, or vomiting are present; but in many cases these are absent; the pulse is slow and the skin cool. This affection is sometimes conjoined with gout, when the stomach has, previously to the attack, been overloaded by indigestible food; and by the hypothetical part of the profession, who follow old opinions rather than modern facts, it has been regarded as something peculiarly strange, in short, as gout in the stomach. The three remedies most beneficial in this affection are—laudanum, hot water, and pure brandy, but the last is by far the most efficacious in general; a small wine glass of it, sipped slowly, generally serves to remove the pain, which, if allowed to continue many hours, sometimes leads to inflammation of the stomach. When one attack of this affection has occurred, the patient should be most careful in avoiding the exciting causes for the future, since it is apt to return under similar circumstances. When a meal is taken during a state of exhaustion, it ought to be simple, slowly masticated, and moderate in quantity, a little white wine being taken with it, which, in such cases, greatly assists digestion.

LOCAL SIMPLE EXCITEMENT, AND CHRONIC INFLAMMATION OF THE MUCOUS MEMBRANE OF THE STOMACH.

Local simple excitement, and chronic inflammation of the mucous surface, are most frequently the result of that abuse of the stomach, through excess or complication of diets or drinks, so common in civilized society. The local simple excitement is denoted by the tip and borders of the tongue being more red, and

the papillæ being more raised than natural, while the centre is slightly furred, and the patient has some uneasy feeling, occasionally in the stomach, the mind being more fretful than ordinary; there is no pain on pressure about the epigastrium. This state of the stomach may continue for weeks, and even months, but it is liable to be followed, at last, by chronic inflammation of the same structure.

Chronic inflammation of the lining of the stomach is attended by symptoms similar to those of local simple excitement, but in the former there is pain on very moderate pressure at the epigastrium, and this pain is most distinct after food has been taken, which, in general, more or less increases the irritation, and often occasions some degree of sickness. Chronic inflammation of the stomach is sometimes accompanied by some fever, but that is oftener absent, as far as the heat of the surface is concerned, though the pulse is mostly a little accelerated. Chronic inflammation, as well as local simple excitement, is sometimes followed by an attack of acute or subacute inflammation, a common consequence, indeed, of chronic irritation of all mucous surfaces.

The local simple excitement is generally best removed, provided the mind can be kept tranquil, by three simple and very moderate meals in the day, the mastication being slow, with rest immediately after each meal, and a sufficient interval between each, that one may be digested before the other be taken. In such cases, one meal of animal food may be allowed: new bread should be prohibited, and the stomach ought not to be distended by too much liquid. Much benefit often results from keeping some aromatic, such as a clove in the mouth, after each meal, as it produces a copious flow of saliva, which greatly assists digestion. In addition to a regulated diet, the warm bath, at the temperature of about 96°, is often extremely useful, with regular exercise in the open air, early hours as to sleep, and, if possible, a cheerful tone of mind, which, as Bacon observes, helps digestion more than is imagined. With regard to medicines, if the bowels be constipated, they should be relieved by a mild aperient pill occasionally, and when any acidity exists, a few grains of the carbonate of potash or soda, or a few drops of the liquor potassæ may be

given two or three times a day, in any simple vehicle. But this complaint is best removed by a suitable diet, the rule of which can be easily deduced by a sensible person attending to his own feelings after meals, following too the vulgar adage, namely, only eating when he is hungry.

In chronic inflammation of the mucous membrane of the stomach, the diet must be entirely bland. While any pain exists on pressure, animal food must be wholly prohibited; in such cases a bland diet of sago, or similar articles, answers the best, in small quantities at once, and not repeated more frequently, perhaps, than about once in five or six hours. This plan, with the use of the tepid bath, lavements, or mild aperients, and the repeated application of leeches to the epigastrium, as long as the least degree of pain exists, will generally soon remove chronic inflammation of this structure. I have seen several cases of chronic inflammation of the mucous surface of the stomach pass on to actual disorganization under the use of the blue pill and the flesh diet, on the sweeping supposition, that the affection was disorder of the digestive organs.

Stricture about the cardia, and on scirrhus of the pylorus, both of which are generally the product of inflammation, though that stricture about the cardia may and does take place spasmodically, independent of inflammation.

The extensive sympathies which the stomach has with other parts of the body, a fact which has not escaped the observation of Celsus, two thousand years ago, who says, that when the stomach is disordered, the whole system is disturbed, and that the weak parts there especially suffer. The great influence which the stomach has upon the heart, in some cases suspending, oppressing, or exciting its action, and thus, through that organ, affecting remote parts; I allude to those other particular sympathies by which irritation may arise in any structure of the body when the stomach remains chronically disordered; and lastly, the general irritation which it often maintains in the nervous system, in many cases influences the blood itself, where the digestion has been rendered imperfect.

CHRONIC AFFECTIONS OF THE SMALL INTESTINES.

Though many crude conjectures now exist respecting the duodenum being the common seat of disorder, yet as that part of the intestinal canal is found, on dissection, very rarely diseased, it may be confidently inferred, that it is seldom disordered during life, since those structures which are the seat of disorder in the first instance are the most likely to exhibit traces of organic derangement after death, a fact familiar to all who are in the habit of cultivating morbid anatomy. The mucous membrane of the remaining portion of small intestines is very liable to chronic irritation and inflammation, particularly the lower part of the ilium. Chronic inflammation of the mucous membrane of this part, indeed, is not only common to delicate adults but also to children, many of those cases called marasmus being connected either in their origin or progress with such a condition, which is very apt to lead to disease of the mesenteric glands if overlooked for some time after its commencement. Enlargement of the glands is generally owing to some adjacent irritation, which, however, has the greatest effect when the body is weak. In elucidation of this, the sub-maxillary and adjacent glands enlarge, when any irritation exists about the throat; the bronchial glands, when any exists on the bronchial lining; the inguinal, when any exists about the penis, as in chancre; and lastly, the mesenteric, when any exists on the mucous lining of the intestines.

Chronic inflammation of the mucous membrane of the small intestines is generally attended by an unnatural state of the skin, and often by a torpid or irregular condition of the liver, the last of which appears to be in the series of symptoms so usually a secondary affection. The symptoms by which chronic inflammation of the mucous lining of the small intestines is denoted, are redness of the tip and borders of the tongue, with some redness and elevation of the papillæ, together with an obscure uneasiness on pressure, with a somewhat harder feel of the abdomen than natural, while the stools, on the exhibition of a mild laxative, are generally slimy in some degree, and even

often so when no laxative has been given. In all cases the bowels are easily moved, but diarrhœa is absent so long as the large intestines are not implicated in the inflammation. The body gradually wastes, the appetite begins to fail, and the case either terminates by a slow fever or by a sudden attack of acute or sub-acute inflammation, which is not an unusual consequence of chronic inflammation. This affection is remediable for a considerable time after its commencement, but when misunderstood or maltreated, ulceration often results with disease of the mesenteric glands, and then it is almost always mortal. In the first stage, in that before ulceration has occurred, or before the structure of the mesentric glands has become deranged, rest, a bland farinaceous diet, an occasional warm bath, the mildest laxatives about every second day, and the repeated application of leeches, so long as the tongue reamins red and the pain exists are the remedies most to be trusted; but where the stools, on examination, show a deficiency of bile, then a small dose of calomel, with a few grains of rhubarb, may be given every second night with advantage, till the biliary secretion is restored. Most of the practitioners in this country, who have been educated under the nosological system, still remain ignorant of the nature and treatment of inflammation, especially under a sub-acute or chronic from of the mucous membrane of the small intestines, and regarding the mucous stools as the disorder, they give harsh purges daily and do a great deal of mischief. The truth is, that the mucous stools are merely the effect of the inflammation, the increased secretion which generally attends that state, and any other than the mildest laxatives, and those exhibited only occasionally, do very great harm in such cases. I have seen several cases in which strong purgatives, and also antimonial mixtures, have been fatal from their irritating properties; the irritation which they so frequently excite on the intestinal lining, is often a cause of affecting the head in children particularly, and in adults also, when hereditarily predisposed to head affections. The fretfulness of temper, or depression of spirits, which so commonly accompany irritation of the mucous lining of the primæ viæ, is a proof of the powerful sympathy of these parts with the head. When chronic inflammation has been removed, warm clothing, a fresh

atmosphere, and a light nutritious diet, are the fittest measures to restore the strength, which ought, however, in all cases to be not suddenly but gradually confirmed; for when patients are at once put upon a full diet, or even when they indulge in any indigestible articles of diet, a relapse is generally the consequence. Caution convalescents against those fruits which have skins or seeds, and even such vegetables as cabbage or potatoes, for some time, and recommend such bland vegetable food as sago, arrow root or bread, no portion of which is apt to escape undigested from the stomach into the intestines.

CHRONIC AFFECTIONS OF THE LARGE INTESTINES.

Torpor of the colon is a very common disorder. Sometimes it depends on a deficiency of bile, as the stools evince; but much more frequently it is unconnected with such a cause, and arises from sedentary habits, from night-watching, from anxiety of mind, and from neglecting to have an evacuation at the accustomed hour. The tone of the gut being diminished, the peristaltic action of the intestines is not sufficient to overcome the sphincter, and hence small evacutions only are passed, and these sometimes so compressed, as to give the idea of the existence of stricture; indeed I have seen many cases which have been erroneously treated as permanent stricture, which soon and entirely yielded when the contents of the colon where dislodged, and its tone restored by proper diet and exercise. This affection is denoted by a sense of fulness in the bowels, by the evacuations being small in proportion to the quantity of the ingesta. The patient in its progress is affected in his appetite, liable to head-aches, palpitation of the heart, and frequently spasmodic attacks in different parts of the body, but especially in the stomach, bowels, or about the neck of the bladder. A long continued and large accumulation of fæces in the colon is sometimes a cause of apoplexy, by pressure, probably, on the abdominal aorta; in two cases I found that vessel contracted after death, while the thoracic portion of it was greatly dilated. This affection, however, rarely seems to produce any organic disease of this kind, and is generally easily managed. The warm bath used about twice a week, warm resinous purgatives, assisted by cold drawn-castor oil, and the

moderate use of animal food twice a day, with regular exercise in the open air, and strict attention to the sleep, will almost always ensure regular evacuations. But the colon having been perfectly unloaded, the patient should endeavour to procure a daily and sufficient relief, by instituting a habit at a certain time in the morning, and that once established, ought not, if possible, to be disturbed by any of the existing causes before mentioned. A contrary state of the colon, namely, diarrhœa, an access of bile, as sometimes happens in hot weather; a sudden chill of the surface, not uncommon in this climate; an overloaded state of the colon; the thinner part of the fæces passing only away; offending ingesta, such as the fibres, skins, or seeds of fruits, portions of radishes, or the like; and lastly, inflammation of the upper portion of the mucous membrane of the colon, so frequent a concomitant of diarrhœa, that in every case its existence or non-existence, should be ascertained satisfactorily.

Stricture of the rectum, and piles, both of which frequently result from constipation, chronic inflammation of the peritoneum and tubercles. Chronic inflammation of the peritoneum is denoted by a diffused obscure pain over the abdomen, increased by pressure. The face is generally pale, the breath more disturbed than natural, the pulse a little accelerated usually, the bowels constipated, the appetite capricious or prostrate, and the sleep unsound. If neglected for a considerable period, the convolutions of the intestines are apt to be glued together by the exudation of lymph, which becomes organized; and from that time the patient becomes more and more emaciated, the skin at last being of a sickly sallow hue all over, but especially about the face and hands. In some cases, however, the effusion of serum is so copious as to lead to abdominal dropsy, an effect of this disorder not very uncommon. The remedies for this affection are, in the earlier stages, rest, a spare diet, blood-letting general and local, and the mildest laxatives occasionally exhibited, with a few grains of colchicum, and when the stools show a deficiency of bile, a small dose of calomel ought to be given now and then, so as to restore the natural secretion.

As to tubercles, they sometimes arise on the peritoneum, from the irritation apparently of a previous inflammation there, especially when the strength of the body has been taken up by debilitating causes, such as copious losses of blood, or the long continued employment of mercury, a bad diet, cold, or a confined atmosphere. It is, however, equally certain, from examinations which I have made, that tubercles arise in the peritoneum, as in other parts, without inflammation. Tubercles, in this, as in other structures, are most frequently connected in their origin or developement with the application of cold, under a debilitated condition of the body, as before explained, in speaking of pulmonary consumption. The existence of tubercles in the peritoneum is denoted by an uneven feel of the integuments of the abdomen, when the ends of the fingers are pressed and passed over them, as if hard knots had been deeply imbedded in the cellular connecting membrane, though their seat is inside. The surface is generally pale, and the patient mostly complains of the difficulty of keeping himself warm, particularly in the extremities. The tongue is furred, the bowels constipated, and almost invariably pained on the administration of a purgative. In some cases the pulse is quicker than natural, but in others I have found it slow when the signs of inflammation were absent. The tongue is furred, and the body for the most part gradually wastes, the skin having a withered appearance. I know of no cure for actually existent tubercles, but they may remain latent for years in the peritoneum under a regulated regimen. But when an attack of inflammation arises, it ought to be treated on the common principles, some lives having been saved by this method. Be cautious against the use of harsh purges in all cases of this kind, which I have seen very prejudicial. A little cold-drawn castor oil, or the electuary of senna, answers very well, or an injection, merely to prevent an over accumulation of fæces in the colon.

CHRONIC AFFECTIONS OF THE LIVER.

The liver has been made a sort of lumber-house in physic, into which almost all anomalous complaints have been thrown by

some authors ; and yet the pathology of this organ is capable of much precision. So much has been written about bilious complaints, and such is still the *rage* in London for the blue pill, that many persons think it almost necessary to their existence ; but such will do well to be guided by common sense, to discard the constant use of so pernicious an ingredient, and so to regulate their habits, as to render all medicine unnecessary. It is a serious mistake of the public opinion, in this country, that chronic affections are solely to be counteracted by medicine ; under this impression, which accords with their wishes of animal indulgence, they take their daily pills and potions, and also their dainty dishes and favourite drinks, by which the disorder is created in the first instance, and is maintained afterwards despite of the farrago of drugs which they swallow. Independently, however, of any errors of diets or of drinks, the emotions of the mind, and the ocean of variable atmosphere, at the bottom of which we breathe, greatly influence the condition and functions of the liver, and yet such is the corrective power of the system, that all the slighter disorders thus produced are mostly removed by those spontaneous actions by which an organ itself either rectifies an irregularity, or by which it is rectified through the compensating offices of some other part. So true is this position, that if any person of common observation would take the trouble to observe the changes which take place in the kind or quantity of the biliary secretion, as evinced in the evacuations, he will find that though from diets, drinks, mental emotions, or atmospherical influence, the secretion of bile varies considerably in the course of a week in many persons, yet abstain from physic and physicians, and it shall become perfectly natural in a few days. It is of the utmost consequence that medical pupils should be thoroughly acquainted with such facts, lest they fall into the common error, particularly in regard to the liver, of prescribing medicine of an active quality, when none is necessary. It ought never to be forgotten, that medicine, and especially mercurial medicine now so much in vogue for chronic ailments, is not a neutral agent, but it either does

a great deal of harm or a great deal of good, just as it is discreetly administered, or on the contrary. If common diets and drinks, if mental emotions and atmospherical vicissitudes affect the liver, it ought also to be known, that many drugs have a similar influence, and none so much as the preparations of mercury. One respectable author, in a recent compilation on indigestion, has laid it down as a rule that mercury should be continued as long as the stools remain unnatural. Now, according to my experience, no mercurial rule can be more erroneous or pernicious, since in many cases the stools are made unnatural, and kept so solely by the administration of mercury day after day, and week after week, to the great prejudice of the patient, as I have repeatedly witnessed. The kind of stool which mercury produces I have before particularly described; and when any doubt remains on the practitioner's mind from want of sufficient experience on the subject of these changes, he will do well to suspend the mercury for a few days in order to ascertain whether they assumed the natural appearance when the morbid effect of the mercury has been removed by time. I advise the administration of certain mercurials in some ardent forms of acute disorder, in which its judicious administration is most decidedly beneficial; but the effects of this medicine are so modified by the state of the body at the time of its exhibition as to require the closest observation to deduce those practical rules which lead to its judicious employment in all cases where it is really indicated. In particular, I am confident, that it is greatly abused in the British metropolis, both in the chronic affections of children and adults, and next to the use of wine and ardent spirits, in the latter, is one of the most common causes of deranging the structure of the liver; while in the former (I mean in children) it very frequently indeed breaks up the general strength, and leads to the developement of tubercular disease, or ill-conditioned inflammation, both of which have been confounded under the desultory term scrofula. Yet as there are some affections of the liver which require mercury, and some which do not require it at all, I shall now advert to them.

TORPOR OF THE LIVER.

Torpor of the liver, or a defect of biliary secretion, often depends upon coldness of the surface, occasioned by too light clothing, or by the sudden changes of our atmosphere, which so powerfully affect the skin. Sometimes it arises from poorness of diet; those persons who live on vegetable food being more liable to it than those who take a due proportion of animal food Very frequently it arises from depressing passions, or from. sedentary habits, often from the use of ardent spirits, and sometimes it follows a torpid condition of the colon, or an irritable one of the mucous membrane of the stomach or small intestines. Torpor of the liver, even when its structure is entire, is followed occasionally by a contrary state, namely, an excessive secretion of bile, and sometimes it ends in an attack of acute, sub-acute, or chronic inflammation of that organ. Torpor of the liver is denoted by a deficiency of bile in the evacuations; the spirits are usually depressed, the surface cool, the pulse flagging, the tongue slightly furred, and the appetite for the most part deficient, the food being often oppressive, like a load in the stomach for some time after it has been taken. Occasionally the patient is liable to sickness, and sometimes vomits bile green or yellowish, and of a bitter taste, now and then mixed with that of acidity. When the torpor is simple, when it exists without any organic change, which is most frequently the case, the daily use of a warm bath, with a little salt in it, clothing the surface with flannel, regular exercise, and an aloetic pill with the extract of gentian, will mostly relieve it; and when these means fail, a grain or two of calomel may be given every night, or every second night in addition, till a flow of green or yellowish bile succeed, and then it should be omitted. As preventives, an animal diet, warm bathing, proper clothing, and regular exercise, are the best, but the solution of chlorine, where the strength has failed, in some bitter infusion, such as gentian, has an excellent effect.

CHRONIC INFLAMMATION OF THE LIVER.

Chronic inflammation of the liver sometimes follows torpor of

that organ, sometimes it is the sequela of an acute or sub-acute inflammation, but more often it arises insidiously as an original affection. The only diagnostic upon which the main reliance is to be placed, is pain on pressure in the region of the large or small lobe; though some of the following symptoms are usually attendant, such as a deficiency or depravity of bile, depression of spirits, pain about the shoulder, disturbed appetite, aching about the forehead, stiffness about the eyes, sense of uneasiness or oppression at the lower and middle part of the sternum, and sometimes cough; the urine in some cases, as well as the skin, having a bilious tinge, and the tongue being mostly coated with a yellowish white fur at the root and centre. Many patients walk about while they labour under chronic inflammation of the liver, and while this is the case, the cure can seldom be accomplished; but rest in the recumbent posture, moderate general and local bleeding, mild saline purges, mixed with a few grains of the powdered bulb of colchicum, with a spare diet, will mostly remove this affection without the assistance of mercury, but an occasional dose of the latter will accelerate the cure, and in some obstinate cases, it is necessary to induce a gentle ptyalism. On recovery, the patient should keep the surface warm, and abstain from all distilled and fermented liquors. In some of these instances, when neglected, I have known suppuration to take place in the substance of the liver, but even then it is not necessarily hopeless, for when adhesions have taken place between the peritoneal surface of the liver, and that of the abdominal coverings inside, an operation sometimes saves the patient, an example of which came under my notice, where an opening was made into the side, and a large quantity of pus discharged, and the patient gradually recovered afterwards.

With regard to organic affections of the liver, I shall point out two—a hard, shrunk, grey, granular state, with a varicose condition of the vena portæ, and the common tubercular state of the organ, both of which I am confident, from the histories I have taken and the dissections I have made, are far more frequently the product of the abuse of mercury than is commonly known to the profession; be cautious against the abuse of this

medicine, which some speculative authors recommend in all cases where the digestion is affected, without ever having corrected the fallacy of their pathological conjectures by the test of its practical results. It is dangerous to come to the bedside with certain prepossessions that the complaint must necessarily be of this or of that nature. Every case should be investigated minutely through facts alone, and the principles of pathology and practice deduced accordingly. I protest against that system of regular quackery which leads some men to pronounce an opinion at once from the appearance of the tongue, and abruptly to stop all inquiry into the minutiæ, from which alone a true opinion can be deduced, and a rational and successful practice established. Such conduct can only result either from an affectation which is despicable, or an eccentricity which is pitiable; but whether from one or from the other, it ought never to be imitated by medical pupils or practitioners, whose business it is to be most minute observers, since they have to deal with a species of evidence so obscure as to require all the aids of the most diligent observation and the most deliberate reflection.

The morbid condition of the skin, mucous membranes, and liver, I consider often combined in those cases called marasmus in children and dyspepsia in adults; yet as one or other of these parts is very liable to be separately affected, and as this affection may be different in its nature as well as seat, I recommend you not to adopt an empirical mode of practice, but to vary it judiciously, as the circumstances of each particular case requires.

LECTURE XXXV.

AFFECTIONS OF THE URINARY ORGANS.

Some affections of the urinary organs, are internally connected with those of the skin and mucous membrane of the alimentary canal; that structure having remarkable sympathies between

even its remote parts. There is especially one extraordinary complaint, which has hitherto been but little understood. The complaint is *diabetes*, the pathology and treatment of which I shall now endeavour to illustrate.

DIABETES.

In reflecting upon the phenomenon of diabetes it appears that the urinary disorder is not, as has always been supposed, the primary one, but that it is an ultimate effect of a combined disorder of the skin and mucous membrane of the primæ viæ, and likewise of the liver, all of which invariably precede and attend this curious affection. For example, in all the cases which fell under my observation, the skin was harsh and dry, the tongue vividly red at the end and edges; the stools indicative of a deficient or depraved condition of the bile. The large secretion of saccharine urine, and increased vascularity which morbid anatomy shows to be an attendant of long continued cases, it is the mere sequelæ of those unknown changes produced in the blood by the primary affections of the skin, mucous membrane of the primæ viæ, and liver. It seems, therefore, that if the parts thus obviously affected could be restored to a natural state, the diabetes, which have been hither to treated empirically, might cease as a natural consequence. I know three cases of strongly marked diabetes, which have been rapidly and completely cured, by acting on the pathological principles above explained, and others also where the effect has been most strikingly beneficial. The means upon which you must rely, are first upon those which remove the irritation from the mucous membrane of the primæ viæ, which is seated in that of the small intestines most frequently; secondly, to restore the natural condition and secretion of the skin; and, thirdly, to restore the healthy biliary secretion by very mild means, leeches applied to the pit of the stomach or abdomen about every second or third day, so long as the tongue is redder than natural; but when there is pain on pressure over the region of the stomach, liver, or bowels, and when the pulse is hard, general blood-letting should be premised; so long as the skin continues hard and dry, employ the vapour bath about every

second day, which will speedily lessen the quantity and change the morbid quality of the urine; and as long as the stools show a deficiency or depravity of bile, prescribe a very small dose of calomel about every second night, conjoined with some of the compound extract of colocynth, so as sufficiently to unload the colon, which is almost always torpid in such cases. If this medicine does not act, it ought to be assisted by a little cold-drawn castor oil, or the infusion of senna. Allow milk diet with suet broths, or animal jelly, and if any vegetable matter, a very small quantity of water biscuit. Permit the patient to quench his thirst with plain water, or toast and water, and cover the whole surface of the body with fleecy hosiery, which is a powerful auxiliary in keeping the skin moist. There is great liability of relapse, which is almost a necessary consequence, but which may generally be traced to over exertion of mind or body, to some error in the diet or drink, to constipation, to some neglect of sleep, clothing, or to some other irregularity. But when diabetes repeatedly occurs, or has been long protracted, it is apt to give rise to tubercular disease on the principle before elucidated, though occasionally such patients die from head affections, or suddenly from the disorder of the stomach, which arises from great engorgement, arresting the heart's action.

CHRONIC INFLAMMATION OF THE KIDNEYS.

Chronic inflammation of the kidneys is sometimes a sequel of acute or sub-acute inflammation of that organ. It is of great importance not to allow patients to go about whilst the least degree of uneasiness remains there, for several of such cases, through mismanagement either on the part of the practitioner or patient, pass insidiously on, till the structure of the affected kidney has become completely deranged. But chronic inflammation of the kidney more frequently arises sypathetically from irritation of the mucous membrane of the primæ viæ, or from a torpid state of the colon. This kind of inflammation is most common in sedentary persons, and is generally announced by an obscure uneasiness in the region of the kidney, attended by a scanty secretion for the most part, of high-coloured urine. In its pro-

gress it is often connected with calculi of the kidney, and slow inflammation of the kidney is a much more frequent cause of calculi than writers on the subject are aware. An excellent paper has been published by Mr. HENRY EARLE, in the Medico-Chirurgical Transactions, in which that able surgeon has reported cases of inflammation of the kidneys, proceeding from external violence, followed by the formation of stone. I have seen several cases where the inflammation proceeded from other causes, and where it became complicated with stone in its course. In every instance of pain in the region of the kidney or bladder, the urine should not only be attentively examined, but passed through blotting paper, in order to ascertain whether any minute points of stone exist. I recommend the usual evacuations for chronic inflammation of the kidneys, but be careful that the patient has rest and an abstemious diet with the use of the hip-bath. When the urine is pink coloured, you will generally find benefit from small doses of alkalies, but when it has a whitish sediment like chalk, the diluted muriatic, or the oxymuriatic acid, answers a better purpose, combined with some mucilaginous mixture. Colchicum is a powerful adjuvant in chronic inflammation of the kidneys. I have known a species of strumous inflammation of the kidneys, which generally goes on with little or no pain, and in which pus can be often detected in large quantities in the urine; and one kidney is thus sometimes completely destroyed by suppuration, nothing but a cellular bag remaining there, while the other kidney performed the office of both for many years afterwards.

CHRONIC INFLAMMATION OF THE BLADDER.

An overloaded state of the colon frequently occasions much irritation of the bladder, especially about the neck; there are some remarkable cases in which patients have been long troubled with occasional attacks of retention of urine attended by great pain, and which has continued to return with increased violence, under a treatment solely directed to the bladder, but which has speedily and entirely been removed by a treatment directed to the colon. Chronic inflammation of the mucous membrane of the bladder is of frequent occurrence, especially in individuals past the middle age

of life, and in those who have indulged much in fermented or distilled liquors ; but sometimes it is induced by long retention of urine. Like inflammation of other mucous structures, sometimes it exists alone, and sometimes in conjunction with irritation in other positions of that tissue, with disordered condition of the skin. Chronic inflammation of the mucous membrane of the bladder is denoted by a frequent uneasy desire to make water, by a pain or pressure over the pubis, and by mucous sediment in the urine, which at last is generally tinged with blood. General and local blood-letting, rest in the recumbent posture, local fomentations, opiate, suppositories, a bland diet, and mucilaginous drinks, are the means in the first stage of chronic inflammation, and a similar plan when the serous membrane is the seat of inflammation. In all cases of irritation about the bladder, you ought to ascertain the condition of the colon ; secondly, whether or not stone exists ; thirdly, whether or not the prostrate gland is diseased ; and, finally, whether or not stricture of the urethra exists. Enlargement of the prostrate gland generally originates in the principal adjacent irritation. The chief reason why persons advanced in life are the most liable to diseased prostrate gland is, that this is the period of life when irritation about the bladder most frequently exists, the propagation of which reaches, and ultimately diseases, the prostrate ; but, when a gland is once predisposed, any cause, especially disturbance of the stomach, which excites a general irritation of the nervous system, is apt to communicate to that gland. By rest in a fresh atmosphere, a bland farinaceous diet, and tepid bathing, greater relief may be obtained, in many cases of diseased prostrate, than those patients believe who trust entirely to medical prescriptions, which are merely secondary. The error which some surgeons commit in the unnecessary use of bougies, on the supposition that permanent strictures exist in the rectum, when it merely arises from an overloaded colon, operating on the sphincter ; similar errors have been committed in regard to the urethra, where bougies have been introduced without a sufficient enquiry into the previous history of the case. Irritation of the mucous membrane of the urethra frequently attends irritation of the mucous membrane of the

alimentary canal, and under such circumstances the introduction of bougies greatly increase that irritation, and sometimes induce a high degree of fever. Such mistakes may always be avoided, by minutely investigating the rise and progress of each case before the employment of the bougie; not, in short, at once introducing that instrument from first and hasty impression. Much suffering, in the way of operation, might be avoided, if surgeons were generally to make themselves acquainted with the principles of physic; and I deeply lament that superficial system of education, which has the sanction of some college surgeons, where surgery and physic are so entirely separated, that not the least allusion is made to the latter in their examinations, although, in many cases, no man can rightly decide on the propriety of an operation without a knowledge of physic, nor rightly conduct the after treatment, where fever arises, complicated with internal disorder, as often happens.

AFFECTIONS OF THE UTERINE ORGANS.

Many affections are connected with the uterine organs. They are liable to be disturbed by local and general causes, which are greatly influenced by other conditions of the system, and which, in their turn, have a powerful influence, through sympathy on distant parts of the body, especially the brain, lungs, stomach, liver, and bowels. One affection which occurred about the age of puberty, namely, a general plethoric condition of the system, sometimes attended by hæmorrhage from different parts, particularly of the lungs. Another, and almost opposite state of the system, namely, the affections commonly called *chlorosis*. In this disorder the skin becomes unusually sallow, the appetite depraved by a desire for unnatural things, the tongue furred, and the body generally much wasted. Some œdematous swelling generally at least arising about the feet. This affection is most common in females about the age of puberty, and is attended by a retention of the menses, the functions of the skin, liver, and mucous membrane, are generally more or less disordered in this affection, at last so much affecting the constitution of the blood, that if any is drawn it shows a most decided deficiency of the red

particles. The tepid bath, aloetic aperients, with an occasional mild alterative, warm clothing, a simple and nutritious diet, with regular exercise in the open air, should be recommended; the catamenia will generally appear when the restoration of the general health takes place, through the removal of the local affections, before any organic change has been induced.

AMENORRHŒA.

The suppression or retention of the menstrual discharge is generally considered as the effect of some other disorder of the body, especially of the side, about the stomach, liver, bowels, or skin, so commonly and loosely named dyspepsia, but general impressions made upon the nervous system, are not unfrequently a remote cause, such as anxiety, aided by sedentary habits and late hours. When the suppression or retention takes place, females are very apt to complain of the head, a circumstance that ought to be remembered, as it deserves a due consideration in the treatment. A plan of treatment may be followed similar to that mentioned in chlorosis with the addition of leeches to the lower extremities, which ought then to be immersed in warm water: by way of encouraging a free flow of blood in that direction, when the ordinary means fail in restoring the menses, there is considerable advantage from the use of turpentine injections. The Brahmins of India have from time immemorial been in the practice of applying a solution of aloes to the os tincæ, a method which generally succeeds, and never does any harm where it fails. Leucorrhœa is nearly akin in its pathology and treatment to amenorrhœa; it frequently arises from a want of cleanliness among the working classes, who seem to have no idea of the utility of topical daily ablutions in preventing the accumulated irritation of the discharge. The cause of menorrhagia is most frequently mental distress, abortion, the free use of cordials or general relaxation. In organic affections of the uterus, especially scirrhus ulceration, fungoid and fleshy tumours, you must not found an opinion merely from the nature of the discharge and other attendant signs, but ascertain the precise condition by an examination, which guides a practitional, if not

a successful treatment, or at least to a more efficient palliative plan, by which much suffering is avoided to the patient. Many of the irritations of the uterus in their origin are connected with irritation of its mucous lining, a pathological fact which has not been sufficiently considered in this country. The benefit of tepid bathing, independently of its great utility in removing uterine and urinary irritation, its application as a preventive and palliative agent is much greater than either the profession or the public have yet believed. A curious anomaly in the English habits, is that tepid bathing should be so much neglected among a people proverbial, in other respects, for their cleanliness. There is no accounting for the circumstance, without supposing that it depends partly upon the medical profession rarely recommending the use of the tepid bathing, and partly upon the public prejudice.

The advantages of tepid bathing are numerous, and, in the first place, as a preventive of inflammatory diseases. In many cases the surface of the body, in this variable climate, is chilled for some hours before the attack of external or internal inflammation, in fact the continuance of the chilliness is finally the cause of the inflammation by disordering the circulation of the blood, which being equalized at the commencement of the chilliness, by a warm bath, generally prevents the occurrence of any acute affection of an inflammatory nature. In the second place, tepid bathing is extremely beneficial in most cases of chronic rheumatism and gout, especially in those where the functions of the stomach, liver, or bowels are impaired. In the third place, it is highly beneficial, in all those cases technically and indefinitely termed marasmas in children and dyspepsia in adults, since no single means in general has more influence in restoring the natural action of the skin, and also of those parts of the body associated in the complicated process of digestion. In the fourth place, it is an admirable remedy for most of those incipient glandular affections, or ill-conditioned chronic inflammations, which usually pass under the loose appellation of scrofula; and lastly it is so exceedingly advantageous in most cutaneous affections, that its application to them scarcely needs a comment,

when we add its remarkable soothing effects in most uterine and urinary irritations, and consider all the delightful associations connected with perfect cleanliness. The tepid bath should generally range between ninety-four and ninety-eight, as it is most agreeable to the feelings, and is most important that no sense of exhaustion should be produced at the time of its use, and no sense of unnatural chilliness or heat immediately afterwards; a feeling of warmth and refreshment are the certain signs of its agreeing with the patient.

LECTURE XXXVI.

DROPSICAL AFFECTIONS.

Dropsy is seated in various parts of the body; sometimes in the brain; in the theca vertebralis, in the bags of the pleura, in the cavity of the belly, within the pericardium, within the tunica vaginalis, very often in the cellular connecting membrane of the body, and occasionally it is encysted, as occurs in what is commonly called ovarian dropsy.

Dropsy, however, is nothing but a symptom; it is not a disorder or a disease of itself, but the sign of a disorder or of a disease. Cullen gives the names of Hydrothorax, Ascites, Anasarca, and so on, to certain varieties, without the slightest reference to the conditions on which they depend; but although dropsy be a symptom, it is dependent on various causes.

CAUSES.

Dropsy may arise from four different causes; first, from inflammation, acute, sub-acute, or chronic. Thus it originates from acute inflammation within the brain, leading to what is called hydrocephalus internus, or effusion into the ventricles of the brain; the acute inflammation of the pericardium frequently leads to what is called hydrops pericardii, or dropsy of the pericardium; the acute inflammation of the pleura frequently leads to dropsy of the chest, or hydrothorax; acute inflammation of the peritoneum sometimes leads to dropsy of the belly, or ascites;

acute inflammation of the tunica vaginalis sometimes leads to hydrocele; so, in like manner, chronic inflammation of these parts leads to dropsy. In fact, dropsy is more frequently the concomitant, or termination, of chronic inflammation than of any other cause. When dropsy arises from acute or sub-acute inflammation, it is generally attended by pain and fever, a furred tongue, high coloured urine, in which there is sometimes albuminous matter, and the blood abstracted mostly shows the buffy coat; but when dropsy arises from chronic inflammation, fever is generally absent, or, if present, has a slow insidious character.

In the second place, it arises from an obstruction to the transmission or free return of the blood; in that way venous congestion, whether acute or chronic, sometimes leads to dropsy. Night-watching sometimes thus leads to the same result; the heart's action is weakened, with the other parts of the muscular system, the return of the venous blood is consequently retarded, the minute vessels are distended, and an effusion of the more fluid part of the blood, called serum, takes place in the cellular connecting membrane of the lower extremities. It is partly in this way that dropsy frequently arises from bronchitis in old persons; the bronchial affection impedes the respiration, and the difficulty of breathing, by retarding the return of venous blood, causes a fulness in the branches of the pulmonary vessels, and an effusion of serum may be the consequence. It frequently arises, too, from the obstruction caused by a sudden inflammation of the external and internal veins, as for example, of the vena portæ, or of the crural veins, and consequently an external, or internal, effusion succeeds. Some French writers have illustrated this form of dropsy, and Dr. Davis has written a most excellent paper on the subject in the Medico-Chirurgical Transactions, as it relates to what has been called phlegmasia dolens. It is a form of dropsy which most frequently arises in child-bed, but not always confined to the child-bed state, as I have seen cases occur in women who have never been pregnant. On the same principle, tumours may occasion dropsy, by obstructing the return of blood and leading to an effusion of serum from the capillary vessels.

The influence of this cause of dropsy may be proved by direct experiment. Tie a ligature round the arm; let it remain there some time, the blood is prevented from returning, and a cellular dropsy is the consequence. Some such experiments have been made on dogs, which proved the same facts. It would appear, however, that a sudden interruption is not necessary to produce dropsy thus, since cases are on record where no such effect followed the slow obliteration of the vein, the anastomosing branches having so enlarged as to carry on the circulation. It must have been perceived, however, that inflammation is frequently mixed up with this cause, though the more immediate one of the dropsy be obstruction. Organic affections of the heart, are among the most common causes which lead to dropsy through simple obstruction, as may be illustrated in many cases of hydrothorax and some of ascites.

In the third place, dropsy occasionally arises from sanguineous or aqueous plethora, or repletion. Individuals who take large quantities of food, who allow their bowels to become torpid, who leave off their former active habits and beome sedentary, in this way now and then become dropsical from an excess of blood, leading to obstruction and effusion, occasionally without, but more often with inflammatory symptoms. It occurs sometimes after the cessation of the menstrual discharge; many women get plethoric at that period, and ultimately become dropsical; some of them exhibit no distinct sign of inflammation, though it must be confessed, that in most of such cases inflammation is conjoined. When this form of dropsy is conjoined with inflammation, the indications of it are present, and the blood exhibits the buffy coat. In the sanguineous plethora, the blood drawn generally shows a superabundance of red particles. Aqueous plethora arises suddenly, as in weak convalescents, who drink incautiously a large quantity of cold water, which lessening the heart's action and chilling the surface, the return of the column of the venous blood is retarded and effusion is the consequence, when liquids have been too copiously taken. Individuals may sometimes be saved from this form of dropsy by a greatly increased secretion from the kidneys, which act as

a pump in lessening the quantity of blood, when profusion occurs, by increased secretion. Experiments have been made on dogs, by HALES and others, who produced dropsy in them by bleeding and making them afterwards drink largely of water.

In the fourth place, dropsy arises from a morbid condition of the fluids, and a laxity of the solids. An example of this form of dropsy sometimes occurs in chlorotic girls. The surface becomes pale, the muscular fibre feeble, the tongue furred, the stools clay coloured, the form wastes, and the legs begin to swell. There is, in such a case, a complete change in the blood, it becomes more thin than natural, and exhibits a smaller number of red particles than usual when drawn. Sometimes, indeed, it scarcely stains linen, being thinner than claret. The same effects are sometimes produced by copious blood-letting and spare diet: in a remarkable case in which the patient died, no trace of inflammation could be discovered after death. This form of dropsy is often accompanied by organic disease, and sometimes by chronic inflammation.

Some forms of dropsy, do not always come under the heads already described; such, perhaps, is ovarian dropsy, most frequently owing to an insidious inflammation seated about the ovary. This dropsy is encysted, and frequently there are many of these cysts, each occasionally containing a different fluid from the other.

DIAGNOSIS.

The varieties of dropsy have received different names. When dropsy is situated within the bags of the pleura, it is called hydrothorax: when the effusion is in both bags of the pleura, it is attended universally with a difficulty of breathing; but when the fluid is poured out into one of the bags of the pleura only, there is often no difficulty of breathing. An old man who had been accustomed to ascend a long flight of steps daily to light a lamp on a pier in one of the sea ports, had no difficulty of breathing. He died suddenly, and on examination, it was found that one side of the chest was filled with fluid, and that the other was quite empty. I have known several instances of the same kind, though, generally speaking, the breathing is difficult,

especially on taking exercise. The patient is apt to be seized with sudden fits of difficulty of breathing, the sleep is disturbed by frightful dreams; palpitations of the heart often attend, the urine is generally scanty and high coloured; it is often accompanied by anasarcous swelling of the lower extremities, and occasionally the patient has a distinct sense of fluctuation in the chest. The application of LAENNEC's instrument is one of the safest guides in detecting the presence of hydrothorax. In a case of organic disease of the heart, I gave it as my opinion, from the application of this instrument, that the heart was conjointly diseased, with an effusion into both bags of the pleura. The patient died, and dissection confirmed the accuracy of the opinion. LAENNEC, however, disregards too much the attendant symptoms, which should always be carefully considered in forming the diagnosis.

Sometimes fluid is effused into the pericardium, and then it is called hydrops pericardii. In this affection the patient is generally easier when bent forwards, and is very short of breath, or threatened with syncope on exertion. There is often uneasiness in the region of the heart, with palpitation, and pain occasionally shooting down the left arm. It is sometimes, however, very difficult to distinguish dropsy of the pericardium from dropsy of the chest, both of which sometimes exist together.

When dropsy is situated in the belly, it is called ascites; the abdomen becomes rounder and rounder, till at last it is extremely large; the skin assumes a shining appearance, and the veins are seen rambling across it more distended than natural. In the progress of ascites, the face generally becomes pale and peaky. The upper and lower extremities become more or less emaciated, and if the hand be put on one side of the abdomen, and the other side be struck with the ends of the fingers, a distinct fluctuation may be felt, which is the most characteristic sign.

When dropsy is situated in the ovary, the tumour arises at first only on one side, and then gradually enlarges, appearing at first about the size of an orange, and continues to increase. The general health suffers but little, and that forms a diagnosis in the advanced stages between ascites and ovarian dropsy. In drawing

the diagnosis between ascites and pregnancy, contrast the origin and progress of each, and the state of the patient's general health; and where any doubt exists for want of sufficient evidence, the practitioner should defer the operation of paracentesis, till after the usual term of gestation.

Anasarca is a soft inelastic swelling of the cellular membrane, which pits upon pressure. The only case of dropsy of the cellular membrane that can be confounded with any other affection, is that of dropsy of the *integuments* of the abdomen for dropsy of the *cavity* of the abdomen. The diagnosis, however, is easy; if the fist be pressed against the anasarcous swelling of the abdominal integuments, it will be imbedded in a pit, which will not be the case in ascites.

TREATMENT OF DROPSY.

The treatment of dropsy is various, according to its causes. When it depends upon an acute, sub-acute, or chronic inflammation, it may be frequently removed. If the inflammation be acute or sub-acute, it will be denoted by the state of the pulse, by the heat of the surface being higher than natural, by a furred tongue, by the urine being scanty and high coloured, and sometimes upon the application of heat, or of the nitric acid, the water yields a deposition of albumen, but not always; and generally there is pain in the part, which is the seat of the inflammation. If the inflammation be chronic, pain is often absent, but an accurate observer may generally detect the signs of the obscure inflammation wherever it be seated. Bleeding, purging, and a spare diet, with rest and quietude, are the main remedies for this form of dropsy, I have seen individuals relieved with great rapidity by these means. Even when combined with organic disease, this form of dropsy may sometimes be relieved; even where an inflammatory dropsy is accompanied by organic disease of the heart. Digitalis, squills, and colchicum, are sometimes powerful assistants in this modification of dropsy, especially when, the inflammation having receded, the effusion remains as a mere sequela.

In that form of dropsy, which depends upon an impediment

to the transmission or return of the blood, mild aperients and occasional alteratives, generally have a good effect, and when the liver is affected, very small doses of calomel, combined with squills and digitalis, often succeed in the removal of the effusion, aided by the repeated application of leeches to the abdomen. The first object is to discover the nature and the seat of the obstructing cause, and whether or not it be connected with inflammation. The next point is to attempt its removal, where it is uncombined with any organic affection; but when organic affection does exist, as a general rule of treatment, the practice ought not to be so active as in the other case. When dropsy arises from sanguineous repletion, it is best removed by bleeding, purging, and a spare diet; and that dropsy dependent upon an aqueous repletion, is best removed by the use of the warm bath, by aperient medicines, and by acting upon the kidneys through diuretics. There are no medicines, however, more uncertain in their operation than diuretics. Recently dried squills in powder, and fresh digitalis, are the best, assisted by the alkalies, and a properly managed temperature. When dropsy arises from a morbid condition of the fluids, with a laxity of the solids, the practitioner must endeavour to find out the cause of this condition of the body, which will be often found in the combined disorder of the skin, and of the internal mucous membranes, with a torpid state of the liver and colon. What the medical attendant has to do, is to overcome the dryness of the skin by the use of the warm bath every second day, to place the patient in a fresh atmosphere, to stimulate the liver by a small occasional dose of calomel, or blue pill, or to act gently on the bowels by the mildest laxatives; to prescribe a light diet, and if there be pain on pressure over any part of the belly, apply leeches till it be removed, and the patient will have the fairest chance of recovery.

With respect to ovarian dropsy, experience has induced me, in confirmed cases, to concur with the opinion of Dr. W. Hunter, "that those patients have the best chance of living the longest, for whom the least is done." This is certainly a very good remark in confirmed cases, though, in incipient ones, I am satisfied that it is

best to treat them as if they proceeded from slow inflammation, which is often the fact. This is a point which has not been attended to in the commencement of what has been called ovarian dropsy, a disease which, when fully formed, sometimes requires the usual operation as a temporary palliative for excessive pressure. In ascites it sometimes becomes necessary to relieve the patient by an operation. The rule which should guide the practitioner in the performance of it is this: when the distension becomes so great as evidently to impede the respiration, the operation is necessary, but not before. Whenever an operation of any kind is mentioned, it should be proposed with the greatest delicacy, and especially in a case of this kind. The medical attendant should speak of it to the patient as a very trifling operation, merely as a puncture through the skin to let out the fluid, and thus to give very great and instantaneous relief; but to the friends, the real nature of the operation should be explained, since it is only a palliative in general, and since in performing it there is the possibility of an immediate hæmorrhage, and of an ultimate inflammation. There are two precautions which should be observed previous to the operation: the one is, not to confound the dropsy of the integuments with that of the cavity of the abdomen; and the second is, to have a very distinct sense of fluctuation from a sufficient collection of fluid, some persons having performed the operation too early, owing to the great distension of flatus. In the latter cases the intestines, pushed against the inside of the abdominal integuments by the air, have been materially injured in the operation. There are two places at which the abdomen may be punctured by the trochar, the one midway between the anterior and superior spinous process of the ilium and umbilicus, and the other midway between the symphysis pubis and umbilicus. The objection to the first situation is, that when the abdomen is immensely distended the recti muscles are sometimes displaced, and the epigastric artery is carried more towards the side of the abdomen than usual, and it has happened in performing the operation, at that point, that this artery has been wounded. The latter situation is, therefore, preferable midway between the pubes and umbilicus, in the linea

alba, the only objection there being the tendinous structure of the part. The patient being seated in an elbow chair, and having a bandage previously placed round the abdomen, by way of commanding pressure after the fluid flows out, to prevent syncope, the trochar should be introduced till the feeling of resistance ceases, and then it should be withdrawn immediately. The fluid having been drawn off, the patient should be treated for the first twenty-four hours, as if a capital operation had been performed, in order to prevent the occurrence of peritoneal inflammation.

There is no doubt that the operation of tapping may be frequently performed with benefit for collections of water in the chest, and as we have now a precise mode of ascertaining whether or not fluid be in the chest, through the application of LAENNEC'S instrument, there is no reason why the operation should not be performed in urgent cases, for sometimes the inflammation ceases which produced the effusion, and nothing remains to impede respiration, but the pressure of the fluid on the lungs. In regard to operations for letting out fluid in other parts of the body, medical men should be cautious how they make punctures in anasarcous swellings below the knee, since they are apt in some subjects, to run into gangrene.

PROGNOSIS.

The prognosis in dropsy should be founded entirely upon the cause.—That form of dropsy depending upon inflammation may often be removed by proper treatment; that form dependent on obstruction may also be in many cases removed, but is apt to return, where there is organic disease. Those forms of dropsy depending upon sanguineous and aqueous plethora are often cured. Dropsy arising from the morbid condition of the fluids, with laxity of the solids, may be cured, provided there be no organic disease, which, however, is often present in such instances. In every case, the cause of that condition called dropsy must be investigated, and the prognosis deduced from that, and the state of the patient in other respects.

8

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