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A COURSE OF LECTURES ON SURGERY,

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LECTURE I.

Relation of Local Disease to the Constitution; Good Constitution; Constitution enfeebled by Defect or Want of Harmony of great Organs, by impaired or naturally weak State of Assimilative Functions; Varieties of Characters of Disease with Age; Constitution may be benefited by, or habituated to, Local Disease; Disease, a modification of Nutrition.—Inflammation, reparative and destructive; Changes observed in the former consist in an Exaltation of Natural Forces—may be Healthy or Morbid: Effects of Inflammation vary according as Decay or Reproduction are most accelerated by it.

The state of the patient's constitution, and its relation to the local disease under which he suffers, is so important an object of attention in the study and practice of surgery, that I will commence by a few remarks upon this subject.

That person is said to enjoy a good constitution, in whom each of the great organs of the body does its duty well, and in whom they are all well balanced, and in harmony with each other, the nutritive and assimilative processes throughout the system being conducted vigorously and efficiently, so that repair is equal, or nearly equal, to decay. The man thus happily constituted is able to resist many of the exciting causes of disease, to which others of weaker frame fall victims. His accidental maladies are chiefly of an inflammatory nature. The morbid process, partaking of the active character of his healthy functions, advances rapidly, and is attended with well-marked inflammatory fever, in which all the great organs of the body sympathise equally, and in due proportion to the severity of the local affection. The disease demands, and the patient will bear, active treatment, and the case proceeds quickly to a favourable or fatal termination. The gradual decay of age takes place in its appointed time and manner, obedient to laws originally impressed upon the body, is shared by all the organs alike, and is as natural as their development and advance to maturity.

Such perfection of physical formation is, however,

comparatively rare; very frequently the constitution is weakened by a defect in one or other of the great organs, which may be the result of original imperfection, of too early decay, or it may be the effect of disease. The whole body is, by this fault in one of its parts, rendered more amenable to the influence of disturbing causes, and the impression produced upon the system by a local affection is often, under these circumstances, greatly disproportionate to its severity. We are startled at the rapidly fatal effects of an attack of diarrhoea, or an inflammation of the leg, such as we are accustomed to treat with the assurance of success, but the *post-mortem* examination explains the mystery, by revealing an unsound condition of the heart, an imperfection in its valves, or degeneration of its muscular fibres. In one man, a broken leg is followed by an attack of gout; in another, by jaundice; in a third, by delirium; and in a fourth, by palpitation of the heart, with an intermitting pulse, the effects of the shock calling forth the constitutional predisposition, and telling most upon the weakest organ.

Another cause of constitutional weakness consists not so much in unsoundness of any of the great organs in particular, as in a want of due proportion or harmony between them; one or more preponderating over the others, wearing them out, and giving a peculiar character to the diseases which occur. In the plethoric habit, the circulatory system prevails, and disease is chiefly of an inflammatory nature. A small spark is sufficient to light up the flame, but the accompanying fever is not generally so well marked, of so sthenic a character, nor is depletion so well borne as in the more healthy person.

The predominance of the nervous system is especially shown in the affections occurring in sensitive and hysterical persons. The symptoms are essentially of a nervous character, and the system responds so violently to a slight impression, that a severe fit, with complete insensibility and convulsions, may follow a sudden fright, a slight injury, or an attack of indigestion. The pain attendant on a local inflammatory attack is also more or less disproportionate to the other symptoms, or, perhaps, it lingers on after they have subsided, so as to constitute the entire disease; and a very troublesome disease it often proves, resisting all the ordinary means the surgeon can devise, and yielding, perhaps, at last, to some accident, a blow, or strong mental impression.

The hysterical affections of joints are good examples of this class of complaints. A young woman suffered under acute pain, and exquisite tenderness of the ankle-joint, which had continued for months, rather aggravated by the leeches, blisters, and other means employed for her relief. Her health was not much impaired, and there were no appreciable signs of disease in the joint, no swelling, heat, nor crepitation. I spoke to her in a very decided manner, desiring her to leave her bed, and move about the ward. In two days she was walking about, and soon after was discharged from the Hospital. She walked a little lame for a long time, and now (more than two years since she left the Hospital,) she feels weakness, and some uneasiness in the joint, when the weather changes. I do not wish to persuade you that there is actually no disease in cases of this kind, for I believe that there generally is some slight inflammatory condition of the joint or limb, though it is by no means proportionate to the pain and tenderness complained of. It is no very easy matter to assign a true value to the symptoms which are conveyed to us by the expressions of the patient; and as, on the one hand, undue importance is often attached to the local affection of a sensitive patient, so, on the other, I have frequently known the existence of real disease to pass unnoticed, or to be discredited, because the pain and accompanying nervous symptoms were extreme, or of an hysterical character.

The sense of pain often becomes more acute, and the ability to control the emotions less strong, when the system has been weakened by protracted illness and much suffering. Under these circumstances we sometimes witness strange nervous symptoms and hysterical attacks, in persons who had not previously shown any disposition of the kind.

In like manner the pain experienced during an operation, and the effects of the shock upon the system, vary greatly with the nervous susceptibility of the patient; and it is one of the great advantages of anæsthetic agents, that their influence is most easily and certainly induced in delicate and sensitive persons, or in patients who have been weakened by long protracted disease, those very cases in which the pain and shock of an operation are most to be dreaded.

An impaired condition of the assimilative functions, primary or secondary, or both, is also one of the most common causes of constitutional debility, and is a very fertile source of local disease. To instance one class of cases of this kind:—There are many persons who are unconscious of any particular ailment, perhaps are not aware that they suffer from indigestion, have good appetite, and are capable of exertion; but their complexion is not clear, the tongue is habitually white, and the urine high coloured and thick; they perspire easily, or suffer under frequent attacks of diarrhoea. The disorder is not necessarily confined to the stomach and chylipoietic system in particular, but may be diffused over the whole process of digestion, from its commencement in the mouth to its completion in the blood, so that crude or imperfectly-assimilated materials find their way into the circulation, and pass off by the skin, the kidneys, or the bowels, or give rise to a disordered

state of the nutritive processes generally. Such a condition is likely to be induced by long-continued intemperance in eating or drinking, by sedentary occupations, by over anxiety, late hours, &c. You will find that a large proportion of gouty affections, sore legs, boils, diseases of the cellular tissue, and a variety of local ailments, are associated with some such disorder of the alimentary system. Hence the paramount importance of general therapeutical treatment in cases of this kind, particularly attention to diet, which is the more necessary to enforce, because the patients do not always suffer the direct symptoms of indigestion referable to the stomach.

Here I would, in passing, just warn you against running into the extreme of attaching too much importance to the stomach and digestive system, to the entire neglect of the local disease. A person suffers the symptoms of slight inflammation of the bladder, which is observed to vary with the state of the stomach, and to be so constantly aggravated by indiscretion in diet, that the friends encourage the idea of the affection being "all stomach;" and the surgeon is induced to express the same opinion, which he regrets having done when the local disease, assuming more importance, is less influenced by accidental causes. A more careful consideration of the case would have informed him that, though the symptoms referable to the bladder were greatly influenced by the state of the digestive system, their existence under any circumstances was an evidence of disease, or disposition to disease, in the organ itself.

When the assimilative processes throughout the system are habitually conducted in a feeble, rather than a disordered manner, slight inflammatory affections are of frequent occurrence, which are languid in their progress, and difficult to cure. Of this state of constitution, and the character of the diseases to which it is liable, I shall speak more at length when describing the pathology of scrofula.

I must not omit to mention a few of the peculiarities of disease dependent on the time of life at which it occurs. The thread of life, strongest in the middle, tapers at either end; and in the infant and old man a very little will suffice to snap it. In the adult the vital powers are greatest, and the characteristics of the morbid processes most fully developed; the descriptions of pathology and rules of treatment are, therefore, usually to be understood to relate to that period of life, unless it be otherwise expressed.

The fine soft delicate frame of the child is peculiarly susceptible of disease, which may be easily communicated to it by contagion or atmospheric influence. The nervous system, in advance of the rest of the body in regard to its development, is highly sensitive; and a slight amount of local irritation, or the commencing stage of inflammation, is attended with great constitutional excitement, so that, judging from the high fever, the quick pulse, hot skin, and furred tongue, we may easily fall into the error of over-estimating the severity of the local affection, and of being over-active in its treatment. The rapidity and violence with which the nervous system sympathises with a local disorder, render slight complaints, such as teething, of serious

importance. Indeed, children often die of the constitutional disturbance, before the local disease has sufficiently advanced to leave any traces discoverable on a *post-mortem* examination. Hence it is, that in a very considerable proportion of the autopsies of infants all the organs appear to be perfectly sound, and we are at a loss to assign the cause of death, if we have not been acquainted with the symptoms that existed during life. Hence it is, too, that children often recover, and recover rapidly, from the most alarming attacks, when the slight cause which occasioned them has passed away. This high nervous sensibility, and disposition to acute sympathetic disturbance, furnishes an important indication of treatment in the diseases of children,—*viz.*, that remedies should be directed to meet the tendency to excitement at the same time that measures are taken to remove the exciting cause. The necessity of adopting this plan more largely, of resorting to the cautious employment of sedatives, and of depleting less actively, is daily becoming more felt.

It should be remembered, too, that children are easily depressed as well as excited;—that they bear depletion ill, and recover slowly from its effects;—the amount of fibrine contained in their blood is comparatively small;—their textures are delicate, and yield quickly to the destructive effects of disease.

Nevertheless, it is to be remarked, that their reparative powers after injuries are great, provided they rally from the effects of the shock, and provided there has not been much loss of blood. The inflammation which follows has a disposition to stop short in the reparative stage, and does not so commonly run on to the destructive stages as in the later periods of life. It may strike you that burns form an exception to this statement; but the fatal result which so commonly follows in these cases is, for the most part, due to the continued depressing influence of an extensive injury of the skin. The children either die of the direct shock, or rally but imperfectly, linger in an enfeebled state, so that they are easily influenced by the exciting causes of disease, and a slight attack carries them off.

The peculiar features of the diseases of old age are, in great measure, owing to the failing vital powers of the whole system, and of those organs more particularly which happen to have been gifted with less endurance than the rest. There is not much scope for treatment, and the old man often shews an instinctive aversion to medicine. The inflammatory affections of this second childhood may, in many respects, be contrasted with those of infancy. The dry harsh frame of the old man is much less susceptible of atmospheric influences and contagion than the delicate system of the child; but it suffers more severely from injuries, for the reparative powers are feeble, and the inflammation induced in this or other ways soon passes on to the destructive stages of ulceration or mortification. The constitutional symptoms of inflammation are rather those of depression and exhaustion than of excitement; the fever is of low type, attended with dry brown tongue, quick soft intermitting pulse, muttering delirium, and so on. Depletion is ill borne: soothing and supporting measures are required. The old man, like the child, is easily prostrated by the onset of disease, and

often dies in the very first stage of an attack. Perhaps he is found dead in his bed, having yielded without struggle enough either to have furnished any premonitory symptoms of immediate dissolution, or to have enabled disease to affix discoverable marks of its existence on any particular organ.

As a general rule it may be assumed, that the existence of local disease is prejudicial to the general health of the patient. But even this statement admits of some exceptions. For instance, a person who has been suffering general indisposition for some months, is greatly relieved by the appearance of a cutaneous eruption or a sore leg; and the sudden suppression of the external malady would in all probability be followed by the occurrence of some more dangerous internal disease. Again, a healthy man becomes the subject of an ulcerated leg in consequence of a blow, a compound fracture, or other accidental cause. In course of time the system becomes so habituated to the disease, that its removal is followed by sinking at the epigastrium, sense of fulness of the head, or even apoplexy. Remarkable examples of this kind are related in the case of persons who had so long suffered from the stimulus of pain caused by stone in the bladder, that the loss of the stone, like that of an habitual dram, was followed by prostration of strength, and some other stimulus was required to supply its place. It is an humbling reflection that we cannot always boast even of our cures; and unless we are in the habit of attending closely to the relation which local diseases bear to the constitution, our patients will often have reason to regret the application of our successful but ill-timed measures.

I would advise you, before commencing the study of pathology, to make yourselves well acquainted with the information on the subject of nutrition contained in modern works on physiology. For you must know that disease is but a modification of the ordinary or natural processes of nutrition; and the extension of disease from one part of the body to another is, probably, no more than a result of assimilative operations, similar to those by which the textures grow and are repaired. In the simple diseases, such as inflammation, the morbid process seems to assimilate to itself, or alter, the healthy nutritive forces of adjacent parts, impresses its peculiar character upon them, and so spreads by radiation from a single point, till the whole system is involved in it. In the specific diseases the same influence is still more remarkable. A cancerous tubercle spreads by the assimilation to itself of the neighbouring structures, which it effects so completely that the natural texture of the part is lost, and the new formation occupies its place. There is, as it were an incessant conflict between the assimilative influence of the disease and the natural forces of nutrition; and the former spreads in proportion as its own energy is great, or the resistance of the tissues to its progress is feeble. Thus cancerous tumours are often first observed when the patient's strength has been lowered by illness, anxiety, or other cause; they grow with increasing rapidity as the powers of the system give way, and in the latter periods of the illness they are propagated to distant parts, which had hitherto

held out against them. In the tertiary stages of syphilis, the increase of the malady and the strength of the patient are often found to alternate with one another, and when our specific remedies have lost their effect, we are content to endeavour, by improving the general health, to keep the disease in check.

Having made these few general remarks for the purpose of directing your attention to the important subjects referred to, I will at once proceed to consider the process of inflammation, which will occupy much of our time, because, in one or other of its stages, it is the source of a very large proportion of the diseases afflicting the body, besides being, at some time or other, more or less intimately associated with nearly all those morbid conditions which do not directly originate in it. It is also frequently much under the influence of treatment, preventive as well as curative; and it presents further claims to our favourable consideration, on account of its being one of the means by which solutions of continuity, occasioned by injury or disease, are repaired, and the integrity of the body preserved. We have, therefore, to consider the reparative no less than the destructive effects of inflammation. We may complain that by its severe attacks the textures are mutilated, and softening, ulceration and mortification engendered; but we must not forget that it carries the balm of healing with it, or that by its milder influences abscesses are opened, ulcers closed, and dead parts detached,—that wounds are healed and fractures united. I am aware that on this point—the threshold of surgical pathology, you will meet with much disputation. You will find one eminent writer upholding inflammation as the great safeguard against the injurious effects of wounds, and stating that without it the lancet prick in venesection would be fatal; while another takes quite an opposite view, sees only its destructive effects, and will admit it to have no share whatever in the salutary processes of reparation.

These contradictory statements are the expressions of opinions in reality less at variance than they appear to be, and result from the different limits assigned to inflammation by the respective authors, rather than from their views of the real nature of the process being so greatly opposed. They may, I think, be reconciled without compromising the opinions of either party, if we will only admit that there are, in inflammation, two chief stages, so dissimilar in their effects that they would scarcely seem to belong to the same process, yet so closely allied in their nature that it is difficult to point out the characteristic marks which distinguish them; and they pass into one another so frequently and insensibly, that the difference is clearly one of degree rather than of kind. These we will distinguish as the reparative and destructive stages of inflammation, and will proceed to the consideration of the former.

In the ordinary state of the circulation, the blood moves through the capillaries in a gentle equable stream, propelled by the force of the heart's action, which has been modified by the elastic influence of the large arteries, and is assisted by the contractile power of the smaller vessels. The red corpuscles float along

in the middle of the current, showing little disposition to adhere together, or to the walls of the vessels; whereas, the white corpuscles, which are of lighter specific gravity, occupy the exterior of the stream, travel less rapidly, and are often seen resting for a time against the sides of the tubes. The fluid elements of the blood soak through the walls of the vessels, permeate the surrounding tissues, and become subservient to their nutrition. The small vessels possess, besides, a certain distributive power over the blood, independent of the central organ, whereby they are able to regulate the local circulation in obedience to the necessities of the part; so that if any particular organ be used more than the others, its supply of blood may be increased without disturbing the general circulation. It is probable, too, that they exert some control over the quantity and quality of the liquor sanguinis which is filtered through their walls for the nourishment of the adjacent structures.

The simplest deviation from the ordinary condition of the circulation in a part, is that which is brought about to make amends for the extraordinary wear and tear consequent upon unusual activity of function, and consists in an increased action of the small vessels. "*Ubi stimulus ibi fluxus.*" The sense of fullness and heat of head after intense application, indicates that the vessels of the brain are busily employed in supplying the materials for active nutrition. They are dilated beyond their usual size, and the blood is passing more rapidly through them. The organ is in a state of active congestion. A similar change occurs in the neighbourhood of a healing wound or ulcer, in obedience to the extraordinary demand made upon the circulatory and nutritive powers, for the purpose of effecting the reparative processes; and the enlarged tortuous arteries of the pregnant uterus, are the result of the same condition long continued. This increase of energy and activity is not confined to the small vessels, it extends in like degree to the blood flowing through them. The several stages of cell-formation are completed more rapidly, the corpuscles are seen to accumulate in greater numbers, and their products, more particularly the fibrin, are proportionately increased and endowed with higher powers of organization, so as to suffice not merely for the nutrition of wearing tissues, but also for the formation of new structures in the place of those which had been destroyed; or for the development and growth of a new being. In like manner these changes may be communicated from the part to the whole system, from the blood flowing through the excited capillaries to that circulating in other regions, and from the minute vessels to the heart. The state of the circulation and of the blood in the pregnant female, and the rapidity and force of the heart's action, together with the general heat of the body occasioned by unusual exertion, are familiar instances of this.

Such a condition, affecting a part or the whole system, we will call the first or reparative stage of inflammation, which is to be understood, therefore, as consisting simply in an exaltation of the ordinary forces of circulation and nutrition, occasioned by an unusual demand upon them, and taking place in

consequence of unusual exertion, or to effect some reparative process. It results from a natural stimulus, involves the several parts concerned in nutrition—the blood, the vessels, and the textures, in due proportionate degree, and is to be regarded as no other than a healthy and orderly action.

It may seem an inconsistency to apply a term usually expressive of disease to a process so salutary, and, indeed, essential to the preservation of the body, as I have described this to be; but I do so for the purpose of impressing upon you, at this the starting point of pathological investigation, that there are no broad lines of demarcation between healthy and morbid processes,—that they pass into one another by insensible gradations,—and that the same process may be healthy or morbid, according to the circumstances under which it occurs.

This reparative stage of inflammation borders very closely upon, and may even of itself constitute, disease. It does so when it exists without any definite end to be attained,—when there is no increased activity of function,—no wound or ulcer to be healed. Under such circumstances it is an injurious process, a morbid congestion, and may give rise to exuberant or unhealthy nutrition, to hypertrophies, warts, and such like structural alterations, to which effects we shall subsequently recur. Or, commencing in a natural manner, and for a desirable purpose, it may easily exceed its normal bounds as a reparative process, and pass on to that which I have called the second or destructive stages of inflammation.

The application of an extraneous stimulus or irritant is attended with precisely the same results as the natural stimulus of increased function; both occasion the same state of active congestion, the same excited condition of vessels, the same accumulation and rapid formation of globules; and the term which is applied to the altered condition in the one instance, should be retained in the other, though the circumstances under which they occur, and the ends accomplished by them, may differ.

This state of active congestion is readily produced, and may be seen by irritating the transparent membrane of a frog, or other animal, under the microscope. The orderly progress of the blood is seen to be disturbed, the corpuscles hurry about confusedly from point to point, the vessels become dilated, the blood continues to pass rapidly through them, and there is a considerable afflux of blood to the part. Blushing, and the red circle you have, doubtless, often observed round the place where you have been making a caustic issue, are instances of the same.

I must, however, tell you that some pathologists, arguing rather from probabilities than from the observation of facts, are strenuously opposed to a belief in the state of active congestion, such as I have described it to you. They regard the process of inflammation in all its stages, as consisting in a relaxed or paralysed condition of vessels, accompanied by a retardation of the current of blood in them. We may not, it is true, be able to explain, by physical laws, in what manner dilatation and accelerated circulation can be contemporaneously effected in the same vessels,

any more than we can understand how the minute vessels assist in the circulation at all; but the general appearance of the inflamed part, the bright red colour, the additional heat, the thumping arteries, and the turgid veins, are sufficient evidence that such is really the case, exclusive of the more direct proof furnished by microscopical observation. There is no difficulty in conceiving that such a condition results from an exaltation of that distributive power resident in the vessels of each particular part, which is generally allowed to exist; active congestion, in short, consists in nothing more than an increased energy of circulation, of the same kind as that which must be of continued occurrence in each organ to meet its varying function. I do not think the objectors to this view have ever given a satisfactory explanation of the turgid state of the veins of an inflamed limb, or of the fact that an increased quantity of blood passes through them, which has been shown by the experiment made by Mr. Lawrence, of opening corresponding veins in both arms in a case of inflammation of one hand, the flow of blood being in the fullest stream from the inflamed limb.

One of John Hunter's experiments illustrates this dilatation of the vessels. Having excited inflammation in one ear of a rabbit, and injected the head from the aorta, he found the arteries of the inflamed ear enlarged one-third beyond their natural size, and arteries were injected in it which had no visible counterpart in the other ear. The enlarged vessels admitting injection more freely, or a greater number of red corpuscles than usual, have led persons to think that new vessels are actually formed in a part during inflammation. This, however, appears very rarely to take place.

It seems probable that the analogy between active congestion, when existing as a disease, and that occurring as a natural phenomenon, in consequence of increased function, is not confined to the condition of the blood of the vessels, but that it may be extended also to the changes which take place in the tissues; for the delay and reproduction of particles appear to be accelerated under both circumstances, in the one as a cause, and in the other as a result, of the process. Parts not unfrequently become hypertrophied, as I have already mentioned, and the researches of Dr. Bence Jones show, that the excretion by the kidneys, of large quantities of phosphate of lime, is a frequent occurrence in the early stages of inflammation of the brain, the same salt being also in excess after great mental exertion.

As we proceed with the subject of inflammation, we shall find that its effects upon the tissues vary according to the proportion in which it influences the decay or the reproduction of their particles; and that its effects are on the whole most manifest on the structures whose transmutation of particles is most rapid. In the early or reparative stage, reproduction is in excess, giving rise to the healing of wounds, or the increase of hypertrophies. In the later stages the accelerated decay and dissolution of atoms is not counterbalanced by a corresponding rapidity of reproduction; on the contrary, nutritive processes both in the blood and in the tissues are alike impaired or disordered, and as

a consequence of these two effects,—increased decay and impaired nutrition, the various destructive results of inflammation, atrophy, softening, interstitial absorption, ulceration, and mortification, are engendered.

THE

CONTAGION OF ASIATIC CHOLERA.

By E. O. SPOONER, Esq., Blandford.

It is now more than three months since the pestilential cholera has been reported among us. Has it swept over the land as an atmospheric influenza? Has it followed any definite track of the wind, or any regular direction of the compass? Has it been attended with any new or unusual atmospheric phenomena? Has it followed any geological formation, or mineralogical peculiarities? From the tertiaries of the London basin, up to the granitic series of Edinburgh, it has appeared with strict impartiality. It lurked about in the fine weather of October, in the wet month of November, and at Christmas it was reported at Belfast, in Ireland, having taken ship from Glasgow. On board one of the emigrant ships from Bremen, it has crossed the Atlantic to New York. All the western ports of our island, however, and all the Channel harbours, have been free from invasion. *They have no extensive trade with Riga, Hamburg, or any of the northern pest ports.*

More than three months ago we were told on authority that it might at any time be expected to jump out of any uncleaned cesspool, or undrained ditch; all our villagers' pigs were forthwith ordered to be killed, for pigs and pigsties were voted "nuisances." Like the fabled "wandering Jew," this swarthy Asiatic was said to be out on his travels through the land, and that he took lodgings in these appropriate localities. Ditches and cesspools are quite as common at Liverpool as at Leith; quite as numerous at Bristol as at Hull; yet, neither Liverpool nor Bristol have yet reported any cases, notwithstanding the stringency with which reports are hunted after, and although three months have elapsed since Hull received her first importation. The shipping of Liverpool and Bristol rivals that of London and Leith, but the shipping all arrive with *clean bills of health from ports not yet contaminated with cholera contagion.*

The *secondary spread of the pestilence* which is now begun will be marked by the appearance of cases at these western ports, as well as some of our inland towns, which are unfortunate enough to receive many infected tramps.

Verbal quibbles about the meaning of contagion are worse than useless. Our great lexicographer defines contagion by the term infection. The terms are synonymous, for he equally defines infection by the word contagion. Contagious matter is either liquid,

as in the small-pox vesicle, or solid, as in the dried pustule, or it may become diffusible in the aqueous vapour of the atmosphere. It then assumes the miasmatic state. The emanations from the bodies of the sick are of this atmospheric character, and consequently become the sport of the winds, or remain hovering like a mist, when the air is stagnant or loaded with moisture. When the temperature favours decomposition or putrefaction, nearly all contagious increase in virulence. Syphilitic contagion appears never to spread atmospherically, though it must decompose, of course, as do all animal poisons. The poison of scarlatina, on the contrary, is highly diffusible; *such appears to be the case with pestilential cholera.*

The contagion of this Asiatic scourge has now for many years been a fruitful topic of controversy in medical fraternities. Among the early practitioners of India who witnessed the first outbreak and successive ravages of this new plague in Hindostan, the analogies of the disease, to the more violent forms of the simple cholera, so accurately described by Sydenham, and ascribed by him to the atmospheric and epidemic conditions of the autumnal season, led them to lose sight of *the specific character of the new disease*, which was at length discovered to be so completely *sui generis*, as to deserve a more diagnostic name than that which they have given to it.

Looking upon it only as a climatorial development of the same disease, in a more aggravated form, they were content to call the one *English*, and the other *Indian*, cholera.

No doubt India had often suffered from epidemic visitations of ordinary cholera, as England and other climates had done. The abundance of the fruit season, and the excessive temperature of the Indian summer, produced the common cholera of milder climates in an endemic form, and they were accustomed, before 1817, to observe occasionally the vomiting, the purging, the cramps, the collapse, and the death of many who were seized.

But the occurrence of the new disease, *during all the seasons of the year*, taking a definite course, with a far more fearful mortality, defying the ordinary therapeutic means with which they were accustomed so successfully to combat its prototype, presenting to accurate investigation some new symptoms of a marked character, at last opened their eyes to that ever recurring enemy which, since 1817, they have had to meet, *in some quarter or other, in every season of the year.* It was as natural for them at first sight to imagine such a peculiar disease free from the principle of contagion, as it would have been, had it been an indigestion or liver complaint. There was no visible eruption of any morbid product on the surface of the body, as in small-pox, or measles, or scarlatina. Many of those who were in close communication with the sick, either entirely escaped, or suffered *but slightly*