

when injected *intra venas*, produce rapid death, preceded by fever and collapse. If it is injected subcutaneously, it does the same thing, producing no local symptoms. In the guinea-pig, which is much less susceptible, it produces local inflammation at the seat of puncture, but no signs of general infection; but, says M. Charrin, if the insusceptible guinea-pig is "prepared" by infusion of some of the product of the very same bacillus, it is thereby, so to speak, converted into a rabbit for the nonce—local reaction disappears, constitutional infection takes its place.

What is the meaning of all this? What M. Bouchard says about it is, that the action relates to the inflammatory process as a whole—that is, that it is not a paralysis of amoeboid cells, as has been supposed, but an action on the whole machinery of living tissue, on vaso-motor nerves as well as bloodvessels; and accordingly he places the chemical action of microphytic products with the action of such general depressants as cold, exhaustion, or even mere restraint of bodily movement, each of which has been shown to favour infection by diminishing local reaction. For by experiments which appear to me to be of surpassing interest he shows that the same culture which, when introduced under the skin of the relatively insusceptible animal in a Cohnheim's tube, produced general infection without local reaction—i.e., suppuration without infection—if it were left at liberty. What explanation can be given of all this but one—namely, that in each instance the same cause which weakens local reaction weakens at the same time, and in a similar degree, the power which the organism as a whole possesses of defending itself against infection. In what this power of defence consists I will endeavour to set forth in the next lecture, in so far as present knowledge is adequate. In the meantime let us avoid attaching any other meaning to the unquestionable fact of phagocytosis, excepting first that the emigration of leucocytes is an essential part in the process of inflammation, and that there is an antagonism between this process and the process of general infection. The most important fact that we have learnt to-day is that the living tissues and fluids of the human and animal body possess, in a greater or less degree, the power of arresting the development of certain disease-producing microphytes, and that certain chemical products of microphytic vegetation impair this protective power, and at the same time inhibit local inflammatory reaction.

In my next lecture our inquiry will extend from the consideration of the non-specific noxæ, of which the morbid action chiefly manifests itself in the production of inflammation and fever, to the still more interesting, but also much more difficult, question—How does the organism protect itself against specific infections?

Address

DELIVERED BEFORE THE

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY,

October 7th, 1891,

By T. CLIFFORD ALLBUTT, M.A., M.D.,
LL.D., F.R.S., &c.

MR. PRESIDENT,—The increase of years in our lives brings with it some soberer joys of its own; were it not so, increasing age would be but increasing sorrow. Of the pathos of age a chief part is the sense of lost opportunities, of duties unfulfilled, of a past, not perhaps wasted, yet bearing the marks of long periods of sterility, of fields ripened to no harvest: of the joys of age, the greatest is to learn that a life so scarred by failures has, nevertheless, yielded some fruit, has cheered and strengthened a few hearts, and has gathered about itself some grace and some kindly memories and affections. An old teacher of medicine looks back almost too clearly upon such a time of unequal performance. He remembers but too well his lectures that were arid, his clinical demonstrations perfunctory, his counsels defective,

his inspirations feeble; and he is tempted in his haste, or in his regret, to say that his life has been spent in vain. Then, as to me, when I was called to this place and service by the voice of an old and valued pupil, there comes a message as out of the past to tell him that his labour has not been altogether in vain nor his voice wholly unheard. Forgive me, then, if I answer this call too readily—if it touch me and compel me to occupy you this evening, with little for your reward. At first I thought that, having quitted the field of the practice of medicine, I could not now pretend to instruct or even to entertain you who have passed me in that field; Dr. Cattle, however, took the risk of assuring me that there might be some value in the reflections of one who, having rested from this labour, would by his very aloofness be enabled to form more leisurely and more dispassionate opinions, or to offer more disinterested advice.

As in this spirit I reflect upon medicine as I have seen it, I think I see more and more clearly the nature and form of the surprising changes which have come over our art since my young days, since the days when I (the nephew of four medical men), in turn myself a medical student, came in contact with those practitioners who had taken their traditions from the teachers of the beginning of this century. In this way the direct or indirect experience of one life may seem to be extended to something like a secular period. Whether we look back for three generations or, in our own time, look away to the most ignorant of our fellow-men, we note across this time, or this space, a change which consists in the decay of medicine as magic and the regeneration of medicine as a department of natural history. When, even at the present day, a suffering woman of the least educated class comes to seek from you medicine for the relief of ills bred of overwork, insufficient food and bad habits, she will scorn your advice even in so far as she might be able to act upon it—she will hear it, as she hears the parson's sermon which precedes the dole, simply as an otiose introduction to that which she needs, which is the magical bottle to dispel her pains. That twelve-ounce bottle contains for her the twelve charms which are to conjure her pains as the contents of the silk and silver bag of Adonbec el Hakim conjured the fever of Richard Cœur de Lion.

The poor woman forms no theory of the action of the remedy; she has not attained even to the antidotal point of view, and she, or rather her ancestors, have relinquished the frankly supernatural. Her pains are a mystery, the nasty potion is likewise a mystery, and she trusts that two blacks may make one white. Out of this mental attitude, however, if mental it be, comes, with no difficulty, the antidotal point of view, a view which at first is not unreasonable, and which leads at last to theories of the highest scientific value. In its beginning an antidote is supposed to act by virtue of a property of repulsion. The terrified man, described by George Borrow, who rushed into the inn at Evora, wore rosemary in his hat to scare away the devil or devilish agencies of unknown kinds, believing this herb in some unexplained way to be repulsive to that fiend; a hypothesis in itself not necessarily unscientific in character, but, so far as we know, untrue, or at any rate unverified. The hypothesis, however, becomes unscientific when diseases are regarded as spirits or entities separable from the body, and as such to be expelled by antidotes, as rabbits are expelled from their burrows by ferrets. Yet, surely, it may be said, our knowledge of the action of poisons, and of the expulsion or annulling of these by antidotes, informs us of some such relation. But an error lies here in the identification of the poison with the disease. I need not say that a poison is no more a disease than a cudgel is a broken head; and that the antidote does not cure the broken head, but, by arresting the blow, prevents further damage and permits that which is done to heal. An antidote in this sense is not the cure of a disease, but the remover of its cause. That the reaction takes place in the vessel of the body is an accident, an unfortunate accident, an accident to be avoided; for antidotal medicine belongs to the sphere of preventive, not of curative medicine. The agents called "defensive proteids" by Dr. Hankin, and so well described by him and by Dr. Hunter, may neutralise tuberculosis and other maladies in man, and if they do we shall be thankful for this tardy salvation; but these inquirers look forward to a preventive use of their proteids, a use which shall anticipate the malady as vaccination anticipates variola, or as Pasteur's inoculations prevent hydrophobia. This would be preventive medicine not only in essential nature, but also in opportunity and practice. Now the sphere of preventive

medicine has extended so enormously that the mere words "growth" or "increase" do not give us a proper sense of its invasion unless we qualify them by more than mere epithets. The change is rather one which profoundly alters the theoretical aspect of therapeutics. Not only savages, hakims, Borrow's wild Spaniard, and our own populace all regard therapeutics simply as curative, but in its main function medicine has been so regarded by almost all schools of the art—I say "almost," because in the school of Hippocrates the scope and use of preventive medicine were foreseen. If, then, antidotal medicine belongs strictly to the domain of preventive medicine; if our quinine should, figuratively speaking, be poured out upon our marshes rather than upon such marsh poison as may have entered a human body; if our therapeutic proteids are to be elaborated as defensive vaccines rather than as cures for disease, or if in any case they combat not the disease but the injurious agent, whether within or without the body; if, again, plagues such as typhoid fever and cholera be extinguished by preventive medicine, as typhus fever already has been; nay, if poisons like the rheumatic, formed within ourselves, are to be annulled by preventive medicines, such as salicylic acid; if all our "specifics" turn out not to be specifics for diseases at all, but destructive of their causes; if some palsies and some mental diseases turn out to be due to alcohol, some others to syphilis, others to lead, and so forth; if some renal and some hepatic diseases are due to external causes; if cancer turn out to be a parasite or in any case to be inexpugnable, and so forth,—then one may begin to cry, Where is curative medicine to be found? Has the notion of curative medicine always rested upon a misconception? In reply to this question, we must look for curative medicine in two directions: first, as a power to promote recovery from injury of external origin; secondly, as a power to mitigate or remove diseases arising within the body itself: such, on our present views of them, may be gout, rheumatism, diabetes, a number of diseases of the central nervous system, of bloodvessels, of lymphatics, and of the viscera, and so forth. As an example of the former category, I will take a case of hyperpyrexia in typhoid fever: herein a state caused by a poison not previously prevented is properly said to be cured when it has been successfully met by cool bathing. As an example of the second category, I will take a case of spasmodic asthma arising by reflexion from some distant point of irritation, be it in the nose or elsewhere, which is cured by medication of the eccentric lesion.

So far have we come on the broader lines of thought. Let us now push forward our analysis into somewhat narrower ways. Even in the treatment of diseases still regarded as autogenetic, is there not a division into means of prevention and means of cure? And is not prevention here also largely gaining ground upon cure? Consider that if in gout we have a human body so constructed as to be an acid-making machine of a particular kind—be the peculiarity of the kind in the nervous system, in the hepatic system, or where you please,—and that we admit the great virtues of curative treatment in such a body—the virtues, say, of blue pill, of colchicum, of alkalies,—do we not admit, valuable as are these curative agents, that yet they hold a subordinate place to regular exercise and air, diet, place of residence, the use of mineral waters, and so forth, which come under the head of preventive medicine? Thus, however closely we investigate the subject, still we find that preventive medicine is gaining upon the curative. Nay, in so far as it be true that the disease of which granular kidney is a main feature owes its origin in many cases to this gouty habit, we shall grant that the only direction in which we can look with much hope for an escape is in the direction of preventive medicine. Curative medicine may triumph in an attack; but prevention will be our plan of campaign, and will lead to far wider and more permanent results.

For a large number of diseases we must sadly admit that we have no treatment whatever, preventive or curative, for of their causes we know little and of their cure nothing. If we turn to nervous diseases we find, no doubt, some remarkable agents having a truly curative action, for in neuralgias and in such neuroses as angina pectoris, gastralgia, and epilepsy, cure opens brilliantly, and the recent discovery of such means as the nitrites leads us to sanguine hopes of further achievements of a similar kind. It will be observed, however, that these remedies too often touch but the periods or dynamic aspects of the maladies I have mentioned, and seem even at early stages to have little or

no effect of permanent cure upon them. Soporifics, again, have been industriously discovered and amended, but, save in certain rare crises, only to be reprobated; for the treatment of insomnia, like that of chorea, is regarded by more intelligent physicians as belonging to the domain of prevention or of the modification of the external conditions. On the other hand, we have a long and direful list of nervous diseases from the highest centres to the lowest, from cell to fibre, from patch to patch, for which we have neither means of prevention nor means of cure, and for these, as a matter of habit, we exhibit certain fashionable formulæ of belladonna, silver, phosphorus, zinc, strychnia, &c., on the principle of exhibiting rosary to the devil; we administer the actual drugs hour by hour, but it would be simpler and safer to sew up the prescription in a bag and let the sufferer hang it about his neck. Yet knowing as I do the eminent importance of stimulating the hopes and animal spirits of the patient and winning him over to the side of the doctor, I shrink from dissuading you from the use of these useful "survivals" until we have some better means to offer, or until the scepticism of the public grows too strong for us. These changes, however, are coming about. When I began practice, to have dismissed a patient with good counsel and instruction, and without a prescription, would have been as much as one's professional life were worth; whereas nowadays we hear of such things being done with impunity, or even with credit.

In diseases of the chest we find interesting matter on both sides of our inquiry. Our better knowledge of digitalis has fully revealed to us the virtues of one of three or four wonderful remedies of the curative class which we possess. The discovery of strophanthus is a welcome addition to the list; like digitalis, its preventive uses are as little as its curative uses are great. I will remind you also of the rediscovery of the value of small venous bloodlettings. Taking heart diseases as a whole, and not forgetting the rheumatic class, we must admit that here preventive medicine has made little progress, while curative medicine has made much; the more or less abiding cures of heart diseases now seen in our daily work prove, indeed, one of the most remarkable advances of modern clinical practice. On the preventive side I can recall little beyond vague precepts of general hygiene, unless it be the estimation of mechanical causes in the production of chronic aortitis. Yet how much is to be done here! Let us try, for instance, to ascertain why cardio-arterial degeneration is almost unknown in other mammalia.

When we turn to pulmonary disease the tables are turned. Without forgetting the occasional aid of emetics, and even bloodletting, at critical moments in acute general bronchitis, which are no novelty; when, on the other hand, we regard the row of dusty bottles and boxes containing endless balsams, expectorants, emollients, and other trash now half forgotten or handed over to herbalists; when we remember how rarely we now use even senega, the best of these, and how exclusively our attention is given to minute regulation of the patient's atmosphere, clothing, and other external conditions, with due recognition of the necessary course of the three stages of the malady, we shall realise how far preventive medicine has here penetrated. A person subject to recurrent bronchitis must be treated almost wholly on preventive methods, and drugs almost as wholly excluded. Of the drugs I have seen administered in acute pneumonia, I can recall many most injurious, many which retarded crisis and convalescence, none which were of use; and Dr. Sidney Coupland, I find, is much of the same opinion. In all these cases, of course, I speak of medicines directed against the disease itself, not of those properly and effectively used against some inconvenient or dangerous incident, such as hyperpyrexia or delirious insomnia, which depends upon an idiosyncrasy or special circumstance of the case. Where, again, are the hundred-and-one boasted remedies for phthisis? What cool observer really relies nowadays even upon the well-puffed hypophosphites, or looks upon cod-liver oil in any other light than as an excellent alternative to suet pudding or rum-and-milk? We know that the treatment of phthisis is now wholly based on principles of prevention, whether these be applied to the suppression of the cause or to the arrest of the mischief which may follow.

I must not weary you by pursuing this subject into all or into any great part of its proper extension, and must content myself with a reference to a few more prominent instances, such as the prevention of renal and vesical calculus, the

prevention of cystitis by antiseptic precautions, of glandular disease by purification of the associated mucous tracts, of spinal curvature by a special gymnastic, of a group of cerebral and other diseases by reduction of alcohol, of another group by dealing with the propagation of syphilis or the neutralisation of its poison, of certain phases of insanity by social reforms, of others by the reform of individual habits, of uterine disease by reforming the customs of women and offering to them new purposes of life, and so forth. How thankful should be the apoplectic patient to be saved the aggressively curative attacks of our fathers in their time; how thankful the sufferer from pulmonary hæmorrhage to be more skilfully nursed and less vigorously medicated. How bright, again, is the success of preventive medicine in the nursery, whence it has banished calomel, brimstone, and the powders of Gregory and James, and has transformed the bringing up of children, to their infinite happiness and physical improvement! But what need of further evidence to prove that while the advance of curative medicine is readily summed up in a few brilliant episodes, the advance of preventive medicine is along the whole line with a steady and uniform tide that knows no ebb.

Let us now wait a moment, and see what is to come of this advance of preventive medicine and of this comparative retreat of curative medicine. We must, I think, restrict ourselves to two points of view: firstly, the natural history of organic diseases; and, secondly, the effect upon the physician of the change in his function from hakim to teacher and guide.

Firstly, we must learn to realise that gross organic diseases as seen in the morbid tissues of the post-mortem room are beyond therapeutics—are our failures. Time is not ill spent in the investigation of them; nay, they represent necessary terms of series, but they are no more maladies than skeletons and mounted skins are natural history. They will teach whither a certain course of change will lead, but the essential thing for us to learn is not where it ends, but where it begins. It is an excellent thing to have the knowledge and the means of treating the bruises, the sprains, the broken shins, and the broken bones of travellers who have deviated from the right way, and, moreover, of collecting their remains and making thin sections of these after they have fallen over final and inevitable precipices; yet, surely, this is but provisional art, and to perfect our art we must trace the points at which these errors first occur, and ascertain the main lines of aberrancy and the phenomena which mark them. I will not fix my eyes on too remote a prospect, I will not contemplate a knowledge so perfect and an art so final as to ensure that every individual shall come into the world flawless and with a full store of implicit energy, when all accident shall be averted, and when every man shall live out his calculated days; but I will more soberly anticipate the time—not, perhaps, very far before us—when it shall be a rare and unreasonable thing for a man of average constitutional value to drift into granular kidney disease, into cardio-arterial degeneration, into insanity, into chronic gout or gravel, into diabetes, into phthisis, or any other twisted and defective state of function, without the means of having his diathesis, his morbid tendencies, and his menacing circumstances measured and explained in their initial stages and, as far as possible, counteracted. This is the future of medicine, and this is preventive medicine. Careless or wrong-headed persons, persons too heavily burdened by misfortune and care, and persons born with defective constitutions—these may fall into disease under the eye of the physician and may not be saved, or disease in them may reveal itself too suddenly for counteraction, though this is a matter of rapidity of foresight; but putting such a small minority as all these should be on one side, our art should be ashamed to admit, a physician should be ashamed to confess, that in the first instance individual characters had not been delineated, hereditary tendencies not calculated, adverse circumstances not adjusted; that in the second instance irregularities of function had remained unrectified and slight static changes had become established, so that wider oscillations of function began to shake the system, and uneasy sensations to be felt in consciousness, and mischief to be so fixed that complete recovery became impossible, and the patient thenceforth was consigned to the sphere of curative medicine! It should be the pride of the physician of the future to delicately weigh where he can weigh, to measure where he can measure, and to push forward accurate measurement

into the sphere of phenomena now imponderable and immeasurable, and thus, knowing the weak elements or irregular tides of each one of his patients, so to counteract their false periods that he may point, not to notes of murmurs and râles, of estimations of sugar and albumen, of motor or electric perversities, and ultimately of interesting necropsies, with details of organic débris in bottles, and of exquisite microscopic sections in cabinets, but to so careful a guidance of his patients that neither frailty of ship nor dangers of channel have prevailed against them. In his note-books functional disorders shall be corrected in their early stages; no accumulation of functional disorder shall be allowed to develop into disease and into untimely death. As I said in my Address in Medicine at Glasgow in 1888, we have to classify disease and disorder anew on a natural system of affinity, and to use our present topical system for indicial purposes only. We must begin to track out and to connect in our minds pathological aberrancies as they run in family trees, and thus studying the evolution of maladies we shall gradually establish the kinship of many which show no superficial resemblance or topical concurrence, and learn the signals of approaching danger. But as yet proceedings in the Court of First Error, if I may use such a metaphor, are almost unknown, though the researches of Mahomed, Broadbent, and others into the first beginnings of abnormal arterial tension are an excellent instance of the kind of clinical investigation of which we stand so much in need.

I will now hasten on to the second question—viz., how will all this affect the present relations between doctor and patient? Radically, no doubt. When the public has once grasped the great truth that preventive medicine must occupy the ground hitherto given up to mere sorcery or the occasional patching of curative medicine, and has become convinced that medicine is an art of continuous vigilance, not of casual repairs, then a new relation will spring up between physician and patient which will be more responsible and more honourable. To run after “cures” will be recognised as a belated effort or a naked absurdity; and the restoration or preservation of health will be seen to depend, not upon particular prescriptions or fashionable doctors, but upon a system of treatment carried out patiently and loyally over long times and in minutest detail. To what do the gouty owe their relief when they seek the wells, or the consumptive when they seek new climates? Partly, no doubt, to some virtue in the waters or in the air; but the more I saw of the cases in such resorts, the more convinced I became that however important these instruments may be, yet success was due less to these than to a rigorous system of management well planned in all its parts and details by experienced physicians. The patient who goes to Harrogate, to Davos, or to Carlsbad with no single eye to the purpose of his visit and under no close regimen will do little good. The patient who, going to such a resort, submits himself at once to close regimen and follows a fully elaborated plan provided for him, will find more benefit even if he chance to reach a less-favoured spot. Hence the very various reports received of similar patients under treatment at baths or sanatoria. Twenty years ago, at Harrogate and at Bath, for instance, all system had fallen into disuse, the waters were regarded as a charm, patients came and went, chatted with a physician, drank the waters more or less, did much as they pleased and more or less badly. Then, when at Aix-les-Bains, Carlsbad, and elsewhere, the eminent importance of a rigorous system became manifest, other watering-places had to mend their ways, to the enormous benefit of their visitors. Why do cases of phthisis often improve in so evil a place as Brompton, and so badly when lodging at Margate, Bonchurch, Oratava, Davos, or where you please? Because in the latter places the patient often thinks it sufficient to be armed with a “prescription” and “general directions,” while in the former, as at Gerbersdorf, he is submitted to the hourly, nay constant, pressure of a therapeutic system thought out in its smallest details. Now this important matter of a closely environing system, so important that with worse means it achieves more than do better means without system, applies to the relief of all disorders, and not only so, but to the rectification of every initial error in the human constitution. The subtlety, complexity, and evasiveness of nature must be matched as nearly as possible by a counterplot as vigilant, as minute, and as various. The comparative tendencies of various races to vary in function must be mapped out, and the modifying

influences of climate, food, and work duly estimated. Anthropologists are already labouring to record the phenomena of physical feature in individuals, and to reduce therefrom some standards and some indications of tendency. But I must not give myself rein on this fascinating subject, having sufficiently shown my meaning and led up to the new relation between doctor and patient. The new medicine will be fatal to Sir Oracle with his carbonate of soda and bismuth, and to Dr. Nostrum with his stranger hieroglyphs, and men will rely upon a highly instructed adviser who knows them individually and their ancestry, who gives few prescriptions, but much teaching, vigilance, and accurate measurement. Will it not be to purify and elevate the profession when society shall no longer ignore the learned and scientific investigator, and, giving him the go-by, rush to the chambers of some manœuvring and ostentatious person who has made himself an illegitimate fame by flattering its follies, by writing in its journals and magazines, or even by paltering with its vices; when educated men shall realise that medicine is at best a preventive system, and only a curative intervention in its failures, and understand that the functions of childhood are the parents of the functions of manhood, and these again of the functions of age? But, it may be said, if a man is set to watch the state of his functions by day and night, by month and year, even by generations and centuries, and to watch external circumstances as they affect his body, heart, and mind, shall we not produce an introspective, hypochondriacal race, whose attention will be thus withdrawn from higher duties and energies, and who will haunt the chamber of the physician rather than engage in the conflicts of daily life. No, surely! What can be more searching in our own day than the laws of our social organisation, what more comprehensive than the system of it? Yet, by the force of habit and the education of social pressure, a man manages to keep the laws of country and conscience and the regulations of work and amusement without the continual presence of a solicitor or a priest in his study, or of a policeman or inspector on his doorstep, and without the increase of morbid conscientiousness or intellectual timidity. It is a new point of view and new habits rather than a selfish anxiety which we desire to encourage; we seek to substitute the calm strength of prescience and timely adaptation for irregular blunderings between ignorance and panic. The best traditions of medicine have favoured this interpretation of our duties; progressive enlightenment is finding for the more honourable of our honourable instincts a permanent intellectual basis, and this wider knowledge will with ever-increasing power mould the mind of the public and lead men to regard us as rational interpreters of natural processes rather than as clever cooks, and the faculties committed to us rather those of teaching and guidance than those of absolution and remission.

Let me not seem to say there is no place for curative medicine; what I say is that curative medicine possesses a few agents of primary and direct importance, and a few more of great incidental importance, but that a large part of our medical prescribing is a survival from old times and old creeds, and that the drift of the modern art is more and more to restrict it and to replace it by preventive or readjustive methods. For even the intensely interesting inquiries into the relations between the functions of certain organs of the body and certain chemical substances artificially varied in molecular constitution promise, I think, to throw light upon physiology and the genesis of disease, rather than to add to our list of curative remedies. The prominent and often even exclusive place, therefore, given to the writing of prescriptions and the swallowing of drugs is not only unwarrantable but positively mischievous, in so far as it leads the public, not to mention ourselves, to attach primary importance to measures at best auxiliary and palliative, and in so far as it blinds us to the far greater importance of studying the earlier and lesser deviations of function and of readjusting the conditions under which the individual lives exist. We are led by our old habits of thought to regard life as a thing of the body alone, and to forget that life lies between the body and the medium, and is, as it were, a play of activities between two surfaces, so that the medium needs as much preventive or curative vigilance as the body does, and is far more within our power and comprehension. Happily, we know the bent of the living organism is under favourable circumstances towards the recovery of equilibrium, and it is for us to see that circumstances are made to favour it.

To turn to my own department of insanity, the necessary seclusion of the sufferer has led incidentally to a concentration of attention upon the medium as a factor of living function, and the influence of surroundings upon the mental faculties has thus been better studied and understood in mental diseases, because it could be more thoroughly handled than in the case of diseases which do not compel the removal of the patient from his usual world. The play of mind lies not in the nervous centres alone, as I have said, but in the relation of these to external conditions, so that such agents as pleasant scenes, musical sounds, the sympathy of friends, the gentle exercise of the faculties in new fields, the gaieties of society, the peace of repose, and so forth, develop, modify or mediate the mind, as the case may be, and are as material in their action as any other vibrations acting upon sensitive structures. It is possible that, owing to the special opportunities for such remedial means and the success of them, attention has been devoted too exclusively to the external factors of mental life; but, surely, those, on the other hand, who are now busily seeking to bring insane persons back to hellebore are working against the light.

Gentlemen, I have ventured to set before you such partial glimpses of truth as may have been vouchsafed to me. It is not likely that any great change in the mental attitudes of doctor and patient will take place in our day. Indeed, all wholesome change is gradual, creeping from point to point; yet he knows best and does best who best foresees—and herein is my excuse, if I am to be excused, for delivering to you this evening so unpractical a discourse.

[NOTE.—In THE LANCET of Oct. 3rd is a leading article upon an address published by Prof. Nothnagel in the *Berliner Klinische Wochenschrift* of Sept. 28th, 1891, which, so far as I may venture upon any comparison, deals with the very matter of my own address at Nottingham. Indeed, so nearly identical is the subject that I feel it due to the Editors of THE LANCET to say that although my address was not delivered until Oct. 7th, yet I find from my diary that it was “finished” at the Eagle’s Nest, in the Valley of Sixt, on Sept. 21st, and was on my return to England on Oct. 2nd placed at once in the hands of a firm of typewriters. About a dozen lines at the end were added in pencil in the train on my way to Nottingham. I did not see the article in THE LANCET until Oct. 11th. Prof. Nothnagel’s address I have not yet seen. May I remind the readers of THE LANCET of the definition of curative medicine in the leading article to which I have referred. The writer says, on page 774: “A cure consists in so modifying pathological processes, be they chemical or physical, functional or dynamic, as not only to arrest them, but to restore to a state of physiological and anatomical integrity the organs and tissues that have been deranged.” And on page 775 he says: “The cure can only take place through vital organic processes, and to medicine belongs the task of determining what outside support can be rendered to the *vis medicatrix nature*.”]

An Address

ON THE

PATHOLOGY OF INFLUENZA, WITH SPECIAL REFERENCE TO ITS NEUROTIC CHARACTER.¹

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MR. PRESIDENT AND GENTLEMEN,—I purpose to show in this communication that the virus of influenza attacks primarily, not, as is generally believed, the mucous membranes of the respiratory tract, but the nervous system of the sufferer, through the agency of the blood; and that the symptoms of the feverish attack, as well as the sequels and complications of the disease are owing to irritant poisoning of a definite portion of the nervous centres. The word “influenza” being somewhat long, and, as it appears to me, not very happily chosen, I have in the present paper frequently used the term “grip”—by which the disease is

¹ Read before the Medical Society of London on Nov. 2nd, 1891.