

# Introductory Lecture

DELIVERED AT

## GUY'S HOSPITAL,

October 1st, 1873,

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MR. PRESIDENT AND GENTLEMEN, — Mine is a pleasant task. For no one who stands here to repeat the welcome with which this hospital greets, year by year, the youths who seek access to her can fail to feel profoundly at once the honour and the pleasure of his work—a pleasure, I may add, that no sense of incompetence can banish. Standing in the name of Guy's Hospital, her governors and staff, to speak, no man need regret his inability worthily to tell her story. She has better witness than any voice could supply—the witness of facts accomplished in the past and constantly repeated in the present.

Gentlemen, if your ambition lies in the peaceful path of the healer of disease, the unraveller of Nature's secrets; if the triumphs that you seek are those which are won by patient toil at the bedside of sickness, undisdaiful of the garret or the cellar if human need have made them holy—triumphs of a skill made quick by sympathy, of a sympathy made a reality by skill,—it is enough to say to you that you are members even now of Guy's Hospital; that her historic nobleness, graced by so many illustrious names, enfolds you; that her resources, by which, when incomparably less rich than now, so many men have been trained to greatness, are at your service. And while our thoughts recall in a rapid survey the names of which Guy's Hospital is proud, assuredly they rest on none with a deeper satisfaction than on that of the physician who has so recently, to the regret of all, resigned the post he has so long adorned. Of those unwearied labours which in past years rendered the name of Owen Rees identical with all that was most profound and helpful in the application of chemistry to pathology and practice it is not for me to speak; but it is known to all how deep is the debt which science owes to them, most heartily acknowledged as it is by those most capable of judging of their worth. How rich and deep is the stream of life that runs through this hospital may best be evidenced, perhaps, by the men it loses from its outward ranks, and yet lives on no less vigorous and strong. But, indeed, they are not lost, for their love is as deep as ever; nor would their service, if it were claimed, be less ungrudging.

But Guy's Hospital gives to you more than a past glory, a present privilege; her honour in the future she commits also to your hands. To-day gathering to her, to receive what of instruction she has to bestow, it will not seem to you so long before you stand as the distributors of her blessings to the world. In you and by you she will live. She will be but what you will make her. Out of your ranks must come the men who shall sustain (it will be sure to be sustained) the honour of the past—nay, of the present; worthy successors of the men to whom now your admiration is so justly given, to whom you will so rightly feel it a privilege to listen, but whom here I must not name. Even more still, by you must be sustained (and will be) that wider, deeper, and higher honour of Guy's Hospital, which depends not on the eminence and fame, however great and well deserved, of a few, but on the good, faithful—yes, and most highly skilful and splendid, though often little known or applauded—work done by the men of Guy's in every land.

For it is the true glory of this hospital that it has, for generation after generation, placed (as it will place you), wherever sorrow and suffering dwell, a mass of truthful, honest, able men, who have willingly let pass no opportunity of becoming true blessings to their fellows in pain and weakness. She has done her part (and will do it yet again in you) in binding all the world in one electric chain of service. As you look round on one another, you are greatly strangers now; but there is a potent magic in these walls: hence you will go forth an army, a band of

brothers, pledged that through you the weight of human sorrow shall be lightened.

There is one spectacle that the past has sometimes seen. Let us record it, lest the future be incredulous; justly incredulous—nay, indignant at the slander. For it was a creature in the shape of a man; and it bore in its right hand a diploma, obtained by pretence of study—a certificate of cunning and deceit. Forth over the earth it walked, a more malignant pestilence: disease itself endowed with will, made powerful to cheat; enriching its armoury of destruction with lies. It has said to the sick and suffering, "Look to me"; and has let them perish, or guided them to a speedier grave. It has made murder its amusement, and thrust its reddened hand into the pinched pocket of the widow; shaming the thief by meaner robbery. But I am wandering from my subject. I was thinking of the times when there could be found men base enough deliberately to mean to say to their sick fellows, "Put your trust in me," and to deceive them with sham knowledge;—of times when men, or things that might be mistaken for them, could come even to an institution like this, where such historic memories challenged their emulation, where misery in every form of pathos appealed to their compassion, and could give to time spent in indolence or riot the name of pleasure.

Very far, indeed, I have wandered from my subject; which is—You, gentlemen, and your studies. For you come here to a feast, than which feast more splendid was never spread before man. In its chief epitome—the human frame—all Nature spreads herself before you, and invites your gaze. As your eye scans the list of subjects you have to master, you might feel disposed to count their number a burden, and wish (without being chargeable with indolence) that your labours might be restricted to a narrower range. But it would be a fatal wish. The extent of the sciences the first principles of which we are challenged to understand is the glory of our art; for it means that it is rooted deep in Nature, and insists on pursuing to the utmost the sources of every fact that comes within its cognisance.

And even now, while we meet, the bounds of medical science are enlarging. Almost we may see them expanding day by day, and making tributary fresh domains of knowledge. Not only chemistry, botany, zoology—these have been long its servants,—but new domains of physics, molecular and other, of the science of electric currents, and of heat; problems of the first dawns of life—for the question of the dependence of putrefaction upon the presence of germs owes its interest and its passionate pursuit to Medicine;—all these are drawn into the widening vortex of our studies. Further still: the structure of the earth is bidden to reveal what part it plays in the production of disease; nor does the geologist touch a stratum too deep, or too remote, for the physician to have an interest in his researches. The explorers of the deepest sea-bottom aid him in the study of respiration; the student of storms for him discovers ozone; and the spectroscopist, we may be sure, will not have done its work till the study of the remotest star lays its offering at the feet of the healer of disease. We have—or, in the person of the physician of the future, shall have—an interest in the colours Sirius flashes back to the patient eye of the astronomer; for they will tell us of our own surroundings. Nay, the milky way itself becomes our servant, and bids us see in its forms of beauty, winding in spiral clusters through infinitude, the very image of the living forms we question with half-hopeless curiosity beneath the highest powers of our microscopes. The physicians are, as it were, the hands of man—of all creatures the most full of needs, and by his needs crowned ruler of them all,—his hands, stretched forth to gather from every quarter, aid for his infirmities, resources for his weakness. And every science is a hand stretched forth in answer.

But that is the worst of it. It is (as a great American, a physician also, says) like shaking hands with Briareus. To invite the universe into our dwelling is to run great risk of being turned out of doors ourselves.

But this is not all. It is not the physical world alone that the physician has to explore to its utmost bounds; the other world of the human mind and its emotions no less claims his study. Not only those among you who will devote yourselves to the treatment of mental disease will be called upon to trace out the mutual interworkings of mind and body, and note with the utmost delicacy we can attain the points at which a bodily disorder begins to react on the

emotions; or where a mental shock or strain, or worry too much succumbed to, reveals itself in impaired functions of the body;—this is the common duty of us all, and one which acquires daily a greater urgency.

More than ever now the medical man becomes, or should become, the friend, the confidant, the counsellor of his patient. A place too seldom filled by him, yet impossible to be filled except by him, stands vacant—that of a friend whose trained knowledge and quick sympathy should be able to unravel for each man and each woman, in these perplexed and restless days, what is merely physical, what mental, in their distresses; where a simple impaired digestion fills the mind with morbid phantoms, and where an unwise or excessive care makes discord in the delicate harmony of the nerves, and sends perverted currents to every organ.

More than ever now the physician must have knowledge of the soul; must feel, with finer senses, other pulses; and measure heats and chills which no thermometer can gauge. The mind, the burning passions, are his study; unwitting of these, or unregardful, half his work—often the larger half—is unperformed. Calm himself, he must for his fellow know ambition and despair; must feel how fiercely burns desire, and with what a leaden weight failure seals up the springs of life. Into the depths of another man's remorse he must enter, or how can he know how it corrodes the frame, and turns the healing waters themselves to bitterness? And his soul, too, must thrill with another's joy, lest he ascribe fancied powers to his drugs, and turn the very gladness of one man to the mortal damage of another. For who will tell us how much medicine has suffered by false virtues ascribed to remedies, because, perhaps, the doctor has wrapped up hope with his pills, or a sudden gladness has turned into the very elixir of life an ordinary draught?

But not even then is our full task accomplished. As students of the mind as well as the body, we approach man under a new aspect. He is no more a mere series of disconnected units, each of which may be adequately regarded by itself. In his intellectual and moral nature man reveals himself as a being of a different order: a wider unity dawns upon us. In science, in art, in social order, and in moral life, man lives on from age to age: he grows, develops, rises through lower into higher forms. Nor have watchful eyes been wanting to note the parallel which this life of consciousness affords to the history of bodily development. This Man, who thinks from age to age more truly and feels more widely, establishes society, and lays down and changes laws,—he, too, is an organic being; and the science of his life and growth opens before us a new and larger physiology. In the central government and its agents we see again the brain and nerves; in the producers of commodities and those who distribute them, down to the smallest retail dealer, there stand before us a transfigured digestive and circulatory system. We cannot, if we would, refuse the parallel; and, indeed, it fascinates us by its interest. We look back to the history of the body politic, and note how, in its earliest form—like the earliest form of the other body—it is an undistinguished mass, every element in which performs functions that are the same; how by degrees, owing to increasing wants and varying relations, special portions of the body, or the society, assume special functions, and, as the special aptitudes develop, become unfitted for the rest; how these specially organised parts are brought into more and more complex union, and become mutually more and more dependent: one life working visibly through the varied whole, and finding its organs created ready to its hand.

If the structure of the lower creatures claims our study, and we feel that we cannot expect to understand aright the human frame unless we know also these less perfect forms, how can we withhold our study from this grander life arising thus before our eyes, and in the progress of which we and our own efforts are tributary powers? What would we not give to see an "ultimate atom" with our microscopes? But, behold, we ourselves are the very atoms we explore; and the mysterious forces which attract them and repel, we feel: they group our fellow-men around us, and our responsive energies reveal to us their power.

So we are swept on, even beyond our goal: we cannot stop where we would. This wonderful frame of man's, which is our special business, is no end; it floats, as it were, on a larger stream, to which we must commit ourselves if we would grasp it rightly. Could we know one molecule of

our own frame, and its diseases, if we ignored the life it served or marred? How then these atom-minds and bodies of our fellows, save by knowledge of the life they help to constitute?

This is no novelty. "The science of medicine," says the physician in Plato's "Banquet," "is, in a word, a knowledge of the love affairs of the body; and he is the most skilful physician who can trace these operations of the good and evil love, can make the one change places with the other, can attract love to those parts in which he is absent, and expel him from those which he ought not to occupy. Our progenitor, Æsculapius, through the skill which he possessed to inspire love and concord in these contending principles, established the science of medicine."

Very far has the science drifted since those days from thoughts like these, and many theories, mechanical and chemical, have sought to explain the mysteries of normal and abnormal life; but the last thoughts of science bring back to us an echo of the words.

All things solicit us. Of course they do. We have aspired to take life for our domain. Does it surprise us to find it boundless?—Let us look into this matter a little more closely.

In all your studies, scarcely anything will give you a keener or more legitimate pleasure than when your physiological lecturer conducts you through researches—many of them the fruits of his own zeal—which will show you some of the most mysterious results of life resolved into simple physical or chemical processes—processes which you may see carried on outside the body. You will feel a pride, almost as of a victory gained, on seeing the hard-drawn line between the organic and the inorganic efface itself before your eyes; as if plain and demonstrable laws of physics were destined to illumine for you the darkest recesses of the world of life. And (as it seems to me at least) this process is destined to go on until all that has been deemed distinctive of life has been included under the inorganic laws. But let this task have been achieved, shall we have resolved life into physics? Rather physics will have revealed itself as life.

If there is nothing more in all the powers of the living world than is contained in the forces and relations of the world around, and that seems so much inferior, what we shall have learnt will be that this inferior world is more than we had taken it for. Assuredly out of nothing nothing comes; most certain of all things is it that deadness does not give birth to life.

Let us but disprove the fiction of a vital force endowed with powers other than those of the universal force, and we have achieved a triumph worth achieving over our own ignorance and false impressions. We have demonstrated that there is no dead world, that the seeming of it is an illusion of our sense. The false distinction that has been drawn shows how our partial seeing had deceived us.

Of this we have other instances. What seems plainer to us than the unity of motion in every place, and under every form? But to the Greeks—looking at motion as it is presented to the sense—it seemed not one, but diverse. To them the motions seen in the heavens, never ceasing in their course, were incorruptible; the terrestrial motions, always ceasing after a longer or shorter time, were corruptible. Because they had not learnt to see that the motions that ceased also went on unceasingly, they divided the motion we know to be one into two, and called them immortal and perishing, living and dead. They judged by sense. But even so do we judge when we divide the one world around and within us into two, and call them organic and inorganic, living and dead. All motion is incorruptible; unceasing, though its form perpetually changes, and baffles so the uninstructed eye. All nature is living, though only here and there can our eye penetrate its secret, and our uninstructed sense misleads us to ascribe to it those properties merely which its narrow powers can discern. What mattered it that—to our fathers' belief—every terrestrial motion ceased? The unceasing motion in the heavens bore silent witness that motion is a deathless thing; and the lagging intellect of man has risen, even with us, to abjure the thought that things that are different to our senses cannot be the same. Even so does the life we recognise bear continual witness (to which our ears cannot be deaf much longer) that life is absent nowhere. What matters it that we have dreamt of dead mechanical relations?

Nature is simple, with the grand simplicity that we call necessity—a perfect intellectual order; but the falsely simple things, that are simple by mere poverty of being, owe their seeming simplicity to lack of perception on our part; and one of the chief benefits the study of physiology confers on man is that it helps him to rise to a truer vision of the whole.

It is easy, however, to see why nature has been recognised as living only in certain forms. If we examine these forms, we find that in them a process that is universal is presented to us in a peculiar manner. In the organic world we see wholes; in all else we see but fragments. Wherever in nature we see the relations of force complete, there we tend to recognise life. For all action in nature has this character—that it comprises equal opposites. Wherever any action begins an equal action ceases; every process has for necessary accompaniment an opposite process that is its complement, and leaves the total relations of force unchanged.

Now in the organic world this relation is presented visibly to our eye. The opposite actions are bound up together in a continuous series, each generating the other within a limited space, and maintaining by their sequence within those limits a perpetuity of movement. The organic differs from the inorganic by the *limit* applied to the transference or distribution of force; so that the correlated opposites pass in a circle so contracted that our eye can follow them, and see that there is no break, no ceasing. It is the same in the inorganic; but we do not see it there till science, illumining our blindness, shows us that beneath the seeming immobility and isolation there exists the same constant activity without pause or break.

As science shows us that the terrestrial motions truly are that which the celestial motions are visibly—unceasing; so science has taught us also to see that the inorganic world is, in its perpetual activity and balanced energy, the same as organic beings are visibly to sense. Simply the organic changes move in a more contracted sphere.

Thus, in “living things” Nature gives us a key to the universal order. She makes herself small enough for us to see her; that by the less she may lead us to the greater. It is a law, gentlemen, that the more is revealed to us by the less; and the seeming greater thing ever is the greater becoming less. It is as if the vastness of the universe remembered our infirmities and bowed its grandeur to the pettiness of our perceiving that we might know it.

Aided most essentially by the light which the study of the living body has given him, the physicist has learnt to recognise, through all Nature, a perpetual series of activities of various modes. But there is one of these modes of action which is presented to us with especial emphasis in the organic world—namely, the storing up of force and its liberation. In the animal body we give to this sequence the special name of nutrition and function, because in it the object attained by the liberation of the force is one of a utility obvious to us, and directly exciting our sympathies; but the process itself is of course by no means a specially animal or organic one. Through all Nature force is perpetually being stored up and given off, and results no less marked ensue. Though often destructive, they are often also of a service perfectly visible to us. Every electric discharge, the thunderstorm, the earthquake, the very light of the sun, and the rain are instances. In every sudden exhibition of energy we see it; and Nature is full of them, mingling with other forms of action to complete the sum of her perpetual change.

But in the world we term organic we see this process—the storing up and setting free of force—as it were specialised, and imparting to it an emphatic character; the living structure is a structure containing force. It is as a bow drawn tense; as a weight suspended. As we see the developing animal body putting forth special organs which carry to the utmost pitch each its peculiar function—muscle for motion, nerves for conduction, and the rest,—so we might well deem that in the whole organic world we saw before us an “organ” of a mightier frame: an organ devoted, as to its special function, to the storing up of force to work ulterior ends.

The apparent distinctness of the organic world should be to us, if we judged consistently, a mark not of the absence but of the presence of life in the great whole of which it forms a part. For life puts forth special organs, and here

is one—in the organic world. Doubtless there are more when we shall have learnt to see them.

Thus it is that the student of medicine inevitably has for his study the whole realm of nature. The tales of our ancestors tell us of a cup offered to Thor to drink. It seemed but a fair goblet, a few gallons, enough, perchance, to drown a man, such as he had often quaffed, and he took it laughingly; but for all his drinking the cup became no emptier. It was the sea he drank. And to you also, gentlemen, is offered a cup, a fair-sized cup, just the knowledge of the human frame—a fair goblet for a thirsty soul. But drain it, drink your fill, exhaust your power; you will find it full as ever: it is the ocean you are drinking.

For if we look at the living body thus—see it as an exhibition of nutrition and function, or of force stored up and an action effected by its liberation—if we recognise that this process is the same in the organic body and in the inorganic world, we can understand why the study of the bodily life has drawn within its compass not only, on the one hand, that of all inorganic force, but, on the other, that of the whole conscious life of man. For in this conscious life we do but meet with the same process under another form. And though our time affords us space but for the merest outline, I should like to make this, if I can, in some small degree clear to you, so greatly does it add to the interest of your chief study.

Suppose that on any subject we are studying we start with a false assumption, there is one way, and but one, in which we are cured. We have to take the trouble of tracing out the consequences of the false assumption, until, through the weight of their unreasonableness, we are compelled to let them go, and accept a different thought. Every *reductio ad absurdum* in our Euclid presents to us the process; there is an effort, a strain, a tension put upon the mind, and as it ceases the premiss is corrected. Force is stored up, and as it is set free a “function” comes, which is the change in our fundamental thought.

Now, take the last great generalisation of science—that which, perhaps, more than any other, will make the scientific glory of the age just past—the unity of force. Is not the process of its attainment plainly that which I have described?—a vast nutrition which had that new vision for its function. It came by a *reductio ad absurdum*. For man's senses gave him a false assumption to start with. They showed him, not the presence of one force, but the appearance of many—arbitrary, disjointed, beginning and ceasing. The electric flash passes and seems to be altogether gone; the wave dies on the shore, but the shore does not move. My mere will seems to me to move my arm, and when its motion is over, there is an end.

What could men have done but what they did?—trace out (as they did with splendid exactitude and completeness) the result of examining Nature on the assumption of many separate forces. And they surrounded themselves accordingly with fictitious entities—imponderable fluids and so on—without end. What a weight of suppositions they had to bear. But it fell at last (most happily for us); and the strain and tension of the mind found relief in the thought of a simple constancy of action appearing under various forms.

We recognise familiarly the identity of the raising of a weight with the nutrition of a muscle, and of the fall of the weight with the contraction of the muscle. But is not the parallel equally obvious in this living process of the mind?—the toilsome raising of the weight of false hypothesis and its sudden fall, effecting how plain a function. A poet has seen this before. Listen to the words Shelley puts into the mouth of Prometheus:—

“Hark the rushing snow!  
The sun-awakened avalanche, whose mass,  
Thrice-sifted by the storm, had gathered there,  
Flake after flake;—in fate-defying minds  
So thought on thought is piled, till some great truth  
Is loosened, and the nations echo round,  
Shaken to their roots, as do the mountains now.”

Thus it is that our advance in knowledge comes by means of crises—by sudden changes gradually prepared for—truer apprehensions to which the very piling up of false thoughts conducts. Wherever ignorance lies at the root, knowledge comes life-wise—by nutrition and function.

And when we advance to the moral life, we see the same laws ruling there also. As we glance back over history, what is more striking than the false *laws* with which man

has bound himself—the false thoughts of right to which he has made himself a slave? When we look at His life to whom our highest life is due, what do we see but the casting aside of needless, hurtful laws, and the grand teaching of a new simplicity of right, one and the same in every changing form? And that He who so taught us gave us the true key to life Nature herself bears witness. As ignorance imposes falsity, and makes the very powers of truth work error, so by a parallel necessity does lack of true goodness in the soul compel man to lay upon himself false laws and make the very powers of good work an intenser evil. Nor arbitrarily is this done, nor wastefully; but—through the same beneficence of life that rules in his body and his mind—to work the same end also for the soul, and by the toil of the nutrition to bring the gladness of the function. False laws, that make a *tension* in the life and set the soul at variance with itself, as they *fall*, bring into the heart of man a truer and better goodness; and even the darkness of superstition is preparation for the light.

Thus we see in a fresh light why it is that the student of medicine must be the student of all knowledge; he studies life, and life is all.

But never yet was task imposed on man that did not bring its recompense; never yet did difficulty confront him, but Nature stood at hand with a secret, waiting for him to learn it—the secret of converting difficulty itself into ease. If to know life aright all things must be known, then by life also *shall* all things be known. Like an heir just come of age, the physician of the present day is distracted with the wealth of his inheritance. It is for you to enter on its full and unembarrassed use. To the whole world—of nature and of man—the human body is the key, unlocking all its treasures. The physician stands at the centre, and sees all roads diverge—all roads clear and straight to him, because he holds in his hands a map of every land. His eye is fixed upon the pattern to which all things conform; into the very substance of his thought have grown, by long and loving search, the laws which speed the progress of the human soul, and breathe into the dust of earth the breath of life.

So much is life the key to all things, and the human frame the key to life, that we may fairly say there is no department of human knowledge in which the quickening influence of the physician must not and will not be felt. The laws of physics and of chemistry are but too partially perceived till we see them, as it were completed and in their perfect cycle, in the organic body. And turning to the other direction, how vaguely are the mind and soul of man apprehended until, by aid of the revelations of organic life, a clue to their history and the significance of their processes is grasped. Seeing them thus, we enter upon them with a new understanding. We perceive that the results man first gains with so much effort are valuable, not for themselves, but for the truer good they are destined to bring, and which comes to us in their seeming loss; that we first possess our own labours truly when we have them in their fruits; our truths in fuller truths, our rights in deeper rights. Nor is the advantage one of thought alone, but eminently one of practice. Interpreted thus by life, the mental and moral experience of man would itself become more truly living, and the supple vigour of an organic process replace more fully the mechanical rigidity with which we still seek vainly to supply its want. As of the living frame, so the true excellence and the true stability of the mental and moral life of man are in its perpetual change, its fluency to nature, its unity with her.

And thus, perchance, there dawns on us a truer vision of the place which the student of medicine should rightly occupy in human life—shall in the future occupy. Holding in his hands the chief key to life, it will be from him, if he worthily fulfils his part, that all men must derive their best suggestions. Of all sciences, of all arts, his art and science must be the rallying point and centre; by its facts all theories be judged, by his successes or failures all other efforts guided.

Only when the thought of a life in them makes them luminous, shall any work of man's hand or labour of his brain be rightly transparent to his eye. Only when the task of rightly dealing with the human body, duly achieved, has marked out the path, shall man with a true success apply his energy to any other toil. Let me take one instance (and I take it by preference from our failures): the

now acknowledged excess to which bloodletting was carried in former days. As lovers of the art of healing, we must look back with regret to a practice by which life was hurt instead of aided. Yet if we could learn aright its lesson, we might find that the error had been a boon to man. For why was it that physicians, fully the equals in zeal and intelligence of any that have succeeded them, persisted so long in a practice which thwarted their own end? This chiefly: that depletion did attain the ends for which it was employed—did quiet the pulse, relieve pain, and transfer the patient from a condition of intense distress and obvious danger to one of manifest relief. The success deceived: the immediate end was gained; and it seemed as if, could the means be carried out with sufficient zeal, it would secure everything. There was the visible demonstrable good: how should it not have been pursued? What our fathers too little regarded was the fact that the human body is a living thing, with infinite reactions.

Medicine has repented of its error; has carried, as some think, its repentance also to excess. At any rate it has learnt to look with more reverence upon the mysterious living thing with which it has to deal, and to understand that the direct results it can secure by its interference embrace but a small part of the problem it has to grapple with. But medicine has not learnt this lesson for itself alone. There is another living frame on which men also aspire to act the physician's part—the frame of the social organism. And is it not obvious how much our errors may teach men here? How strongly they tend to succumb to the illusions which deluded us; to take no account of the untold reactions of the living frame, and look only at the immediate results they can secure—victims, like us, of their own success; rushing to meet every evil with some mechanic remedy; as if this great life, which man's heart and soul work out for themselves, were a mere dead mechanic thing.

They do but follow in our steps, falling under the same temptations; but therefore should ours be the eyes to see for them.

Only one more remark. In the very depths of the soul we see that the laws of life prevail. Not less than the intellect, the conscience also owns them; and because the moral progress is a life, it also has bent itself, and surely will ever bend itself, to hear what the study, not only of man's bodily constitution, but of his bodily infirmities, has to tell.

The future shall be like the past. Of old, there stood before a Man, on the one hand, a law, forbidding him to labour on the sabbath, enforced with all divine authority as interpreted by the reputed wisdom and godliness of his age—this law on the one hand; and on the other, a poor lame man's sorrow. The Man before whom these two claims came—God's, as all men said, and his fellow's—chose which He would heed: and He gave us a new law. He cured the *body*; and mankind, never ungrateful, never unknowing of their friends, have called him the Physician of the *soul*.

The needs of man interpret the laws of God. And who stands so close to the needs of man as you will, gentlemen, to whom, in their very direst need, *all* will cling; to whose voice sick hearts will listen as if it were the very voice of God declaring judgment or mercy; the very skirts of whose garments—if only a heart beats beneath them—faint hands will be raised to touch. Closest to the very sources of the life of the human soul you will stand; it is the physician's place. Of the highest law he is made interpreter.

Thus in the limitless extension of the knowledge which our art demands we may see a proud meaning, a proud prophecy. In stretching out its hands on every side it does but take possession of its own dominion; it does but establish channels through which, into every department of life, even those which seem the most remote, it shall diffuse a vivifying and re-creating power.

These are dreams, doubtless. Every achievement by which man's life has been enriched was a dream once. Only the facts are greater and grander than the dreams, and contain in them the germs of still greater facts to come, which to our eye are evils, and keep us looking to a future still; so that our very discontent is proof of the wealth of our possession. A harvest is not the less rich because a larger seed-time seems to absorb it all. Every good that becomes a fact was once a dream. But no dream ever became a fact except by steps that were no dream—through patient, quiet labour, content to bring, day by day, that one day's work, asking no question but that it should be what



it pretended. By what minute and tedious dissections Hunter made into a certainty his dream of a great unity of life through all the animated world; by what painstaking and protracted experiments Jenner confirmed the dream of a protection against small-pox; by what ungrudging labour of observation and comparison did our own Bright and Addison establish the pathology of the diseases that bear their name, and give a new precision to the healing art. Such as these are the steps by which man's dreams have become his proud realities; and your steps, gentlemen,—true steps in all reality, remote though they may seem, to more than I have dared to image forth,—are, a rigid scrutiny of the bones, and patient continuance in *Materia Medica*.

## Address

DELIVERED AT THE

### ANNUAL MEETING OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION,

Held at the Royal College of Physicians, August 6th, 1873.

By T. HARRINGTON TUKE, F.R.C.P.,

PRESIDENT OF THE ASSOCIATION.

(Concluded from p. 448.)

2. ONE of the most important questions that can engage the attention of the physician practising in our branch of medicine—one, indeed, of momentous consequence to the community—is the alleged increase of insanity. Is it possible that, despite our exertions, the disease, which it is the business of our lives to subdue, is gradually gaining upon us? Very opposite opinions are held upon this subject; and in some very able papers in the *Journal of Mental Science* Dr. Lockhart Robertson has exhausted all that can be said, has adduced all that can be brought forward, in advocacy of the hopeful view, that the statistical returns lead to a fallacious conclusion, and that insanity has not increased in any undue proportion. I regret to say that the elaborate annual reports of the Commissioners in Lunacy, and the inference to be drawn from them, seem to me to unanswerably demonstrate the reverse. The subject naturally attracts much public attention; it is one well worthy of our most careful consideration.

In 1861 the Commissioners in Lunacy reported that they had no reason to believe that insanity was increasing, of course admitting that the absolute number of the insane was larger. They ascribed to improved registration, wider recognition of the advantages of asylums, and to other causes, an obvious weight. I am not aware that they have since expressed any opinion, but the materials to form a judgment upon the subject are amply afforded in their valuable annual reports. In the report for 1872 the Commissioners have given the table now before you.

TABLE II.—*The Ratio per 1000 of the Total Number of Lunatics, Idiots, and Persons of Unsound Mind, to the Population, in each year from 1859 to 1873, both inclusive.*

YEAR.	Population.	Total Number of Lunatics, Idiots, &c., on Jan. 1st.	Ratio per 1000 to the Population.
1859	19,686,701	36,762	1·86
1860	19,902,713	38,058	1·91
1861	20,119,314	39,647	1·97
1862	20,336,467	41,129	2·02
1863	20,554,137	43,118	2·09
1864	20,772,308	44,795	2·15
1865	20,990,646	45,950	2·18
1866	21,210,020	47,648	2·24
1867	21,429,508	49,086	2·29
1868	21,649,377	51,000	2·35
1869	21,869,607	53,177	2·43
1870	22,090,163	54,713	2·47
1871	22,712,266	56,755	2·49
1872	23,074,600	58,640	2·54
1873	23,356,414	60,296	2·58

It will be seen from this return that in the ten years ending in June, 1873, there has been an absolute increase from 43,118 to 60,296; in other words, the number of the insane upon the register of the Commissioners is each year increased by nearly 2000. That there is a much greater increase than is commensurate with the growth of the population is shown by the ratio of the insane to the sane having increased from 1·86 per 1000 to 2·58.

The Commissioners, in their report, have compared the aggregate number of the insane with the entire population. In the following table, for which I am mainly indebted to the kind courtesy of Dr. Farr, our most eminent statistician, the increase of insanity is more strikingly shown by dividing the population into groups of those below twenty, those of middle life, and those of advanced age.

TABLE showing the number of Insane in each year from 1861 to 1871, the Ratio per 1000 of the Population at different Ages.

DATE.	Ratio of Insane per 1000 of Population.	Ratio per 1000 from 20 to 60.	Ratio per 1000 from 20 to 60 and upwards.
1861	1·97	4·1	3·6
1862	2·02	4·3	3·7
1863	2·09	4·4	3·8
1864	2·15	4·5	3·9
1865	2·18	4·6	4·0
1866	2·24	4·7	4·1
1867	2·29	4·8	4·2
1868	2·35	4·9	4·3
1869	2·43	5·1	4·4
1870	2·47	5·2	4·5
1871	2·49	5·3	4·6

Mental alienation being of most frequent occurrence between the ages of twenty and sixty, the exclusion of children and the aged, in figures counted by millions, will make a very great difference in the returns, but does not materially affect the rate of increase. It will be seen at once that the ratio of the insane to the sane, in the adult population up to the age of sixty, has increased during ten years from 4·1 to 5·3 per 1000: an increase of more than 20 per cent.

In the first column the ratio per 1000 of the insane is given in reference to the whole population; the second is the ratio of the insane in the age between twenty and sixty; it is to this I have specially drawn your attention.

These figures appear to prove that a great wave of insanity is slowly advancing, making in each year a definite progress; further examination, however, may show that the danger it presages is more apparent than real, but it is incumbent upon us to examine it carefully, to study well the laws by which it is formed and directed, and to take boldly against this sea of trouble all the arms of science and medicine, all the arts of prevention and cure.

Various reasons have been suggested to explain this increase, supposing it to be such, and some of these it may be useful to consider.

It has been assumed that the congregation of large bodies of workmen in towns and cities, the confinement arising from the nature of their toil, and the restriction of their space, have given us a degenerate population, subject to mental disease. But this is not altogether so; such causes would induce idiocy in children and diminish the average duration of human life, but would not necessarily induce insanity in men of mature years; moreover, it is by no means certain that the inhabitants of the crowded city are more prone to mental disorders than the inhabitants of agricultural districts.

The emigration of the adult population, which has been steadily increasing during the last half century, may also have had some influence upon these returns, but it cannot be a great one; if emigration takes to other and kindred shores some of the finest of our peasantry, the best of our workmen, it also fortunately tempts the unstable, the enthusiastic, the adventurous, the disappointed, who, perhaps, remaining here, fretful and despairing, would have swollen the number of the insane.

The hypothesis has been advanced that the progress of civilisation and the spread of education among the masses have with a greater activity of brain produced a corresponding increase of nervous exhaustion and disease. This is a melancholy theory; it would unsettle our belief in the