Truth, pathology, and the public : address to the graduates in medicine at the close of the summer session, University of Glasgow, Thursday, July 29, 1880 / by John Cleland, M.D., F.R.S., Professor of Anatomy, University of Glasgow.

TRUTH, PATHOLOGY, AND THE PUBLIC.

ADDRESS

TO THE

GRADUATES IN MEDICINE

AT THE CLOSE OF THE SUMMER SESSION,
UNIVERSITY OF GLASGOW,

THURSDAY, JULY 29, 1880.

BY

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TRUTH, PATHOLOGY, AND THE PUBLIC.

GENTLEMEN,

The duty devolves upon me to address to you a few words of congratulation on the present auspicious epoch of your lives. Auspicious may it prove to all of you. To all it must be a satisfaction that you no longer have examinations to look forward to, and no longer feel obliged to read wearily for such ordeals, instead of studying for the sake of information. It is to be hoped, therefore, that your days of study are not now over, but only about to begin, and that the education which you have received at College will prove principally useful by teaching you the methods to be pursued in acquiring knowledge during the rest of your lives.

All education proceeds on one of two plans—the pin-cushion plan, which regards the mind as a dead receptacle, to be packed with facts and fictions, useful and otherwise; or the horticultural plan, which looks on it as a living plant,

to be nursed to a healthy and more mature condition, ere the time for transplanting arrives, when it is to become useful or ornamental by the exercise of the healthy powers which have been educed. It is palpable that in all professional education there is a large mass of fact to be learned, but obvious also that the facts will be of little use, without the art of handling them and turning them to account. More especially is this the case in medicine. The facts which are brought under the notice of medical students are, as you have experienced, these: the modes of preservation of health and treatment of disease; the laws of health and disease and the actions of remedies, which form the immediate basis of treatment: the structure of the body, without a knowledge of which its operations, healthy and otherwise, cannot be known, and without which you dare not use the knife; the chemical laws which govern both the body in its operations and the remedies which you propose to use; and lastly, the characters of animals and vegetables, that domain of life to which our life belongs. I have placed foremost that which is most prominent in the minds of most of you—the treatment of disease; and I do not doubt that you have all learned a great number of details of treatment which you will use to the advantage of patients yet unborn, as well as others, it is to be hoped. But remember that the changes which take place in treatment are perpetual, and that there is nothing reliable in any treatment which is not based on science.

The jeers of Le Sage and Molière, and many a sneer of later date, have been only too well founded; and if there be truth, as truth there is, in the vaunted progress of medicine and surgery in recent years, that progress is entirely owing to two closely connected causes, namely—first, the enormous advances that have been made in chemistry, natural history, anatomy, and physiology; and, secondly, that the practitioner, prepared by the study of these sciences, has applied their methods in his own special studies, has founded a science of pathology, and learned what accuracy of observation means in clinical research. It is then the methods learned in your scientific studies which those of you who aim at reaching the first rank in our profession will find the most useful part of your education, as you woo Nature for her hidden treasures all your lives. This lotion and that operation, O young surgeons; this plaister and that panacea, most promising physicians, will be superseded, it may be, in a very few years; but if you have learned the scientific method, you will help, by patient and accurate observation and thought, progress which shall endure when much crude innovation known by the name shall have been abandoned and forgotten.

How hard it is to be accurate! Nay, rather how impossible! Accuracy is approached, as if by a process of dividing the distance. Constant effort produces constant progress; but a fraction of the distance continually remains. At least, so it is in matters of observation and construction. We begin them with a preconceived

notion as to the degree of exactness required; as we proceed we find we have to amend our notions; and when we have done this several times we find it exceedingly difficult or even impossible to recall the state of mind from which we started. Turn back your minds to the first few days of your studentship, and try to realize your first impressions of, for example, a vertebral column. Probably you thought that nothing could be easier to understand, but wondered at the tiresomeness of detail in the descriptions given by authorities. You will probably also recollect that your teachers took a great deal of trouble to convince you of the importance of much which you had difficulty in appreciating when pointed out to you, simply because at that stage of your development you thought it far too minute and trifling for a rational being to attend to.

Without going beyond ths study of anatomy I might point out many more striking illustrations of the difficulty of arriving at accuracy, by asking you to look back, not on your own history, but on history which can be studied from records, the progress of the science. One example will suffice. Consult the plate showing the vascular system originally published by Vesalius in 1542, and you cannot fail to be astonished at its extraordinary character. The inextricable confusion which it exhibits in matters long regarded as fundamental almost surpasses comprehension; and yet Vesalius was far ahead of his contemporaries. He was conscientiously, and lovingly describing

what he believed that he had seen; and the name that he has left behind him, as well as the remarkable story of his life, is guarantee for the ability which he brought to his work. In 1690, appeared Bidloo's work with its celebrated engravings; and in the plate of the arteries there given, not only is the influence of the plate by Vesalius abundantly evident, but in some respects the inaccuracies are distinctly greater, though as a work of art it is beautiful. It is more difficult to conceive the point of view of these old anatomists than to remember the changes which have gradually taken place in our own conceptions of accuracy; and yet in this instance we have but an example of what may be often seen both in natural history and in human affairs, that the development of the individual repeats after a fashion the development of the race. The art of accuracy had to be learned in anatomy and other sciences precisely as each of us has had to learn it, and as we shall continue to learn it as long as we admit the paramount excellence of truth.

Nor is that which obtains with regard to accuracy in scientific matters less applicable or important in reference to the statements which we allow ourselves to make in the ordinary conversation and business of life. All truthfulness is an art, and a difficult art to learn. In scientific matters the only difficulty in learning this art in most cases is to discipline the observation and teach it to act with rigour and free from prejudice and imagination.

But in the affairs of life, and especially in our profession, there are more serious difficulties in the practice of truthfulness than these. Emotion comes in—emotion, which into scientific investigation ought not to enter, though it too often does; and I do not know a single emotion that has not got a warping power. In your practice you will make blunders, everybody does; and you will try to conceal them, everybody does; it will often be well for your patient that you should. You will learn much which your patients will think that they have a right to know, but which it would be wrong to tell them; and patients' friends will ask distressing questions which it may be your duty not to answer. They will ask you questions, also, especially in the early days of your practice, which you may find eminently inconvenient to yourselves to answer, even when you know full well that you are thoroughly able to do your duty. In all these cases, and in many more which might be mentioned, you will readily see how emotion of one sort or other may interfere with accuracy of statement; and with regard to them all, I may further say, happy is the man who can bring tact to his rescue or even finesse in aid of truth.

No doubt these qualities are too often thought to mark their possessor as false, and it is beyond question that they may be used in support of falsehood as well as in aid of truth. Yet there is a form of blarney to be found in all grades of society perfectly legitimate when it is

the offspring of geniality. It is an art not unknown to the fashionable practitioner; perhaps you may find occasion to practise it. Be tender at least with feelings that are tender and sore, and ever when inclined to prattle remember and beware. It is the man who is looking out with clear and honest eyes, not thinking of himself, that has most time to study his neighbours and become a true tactician; while they who rush inconsiderately into every false position have most difficulty in emerging with clean hands; and the tongues which go spinning for ever like tops are they, the burden of whose discourse is most frequently an hum. It is the pace that kills. Of such an one, had not Johnson objected to playing upon words, it might be said in a sense far different from what he intended, "Nullum quod tetigit non ornavit," for he adds legs and arms to every story he takes up.

Am I wrong then in considering honesty an art, and a very difficult one too? "An honest man's the noblest work of God," says Pope in his "Essay on Man," much to the disgust, as you recollect, of Mr. Burchell, who thought the reputation of men was "to be prized, not from their exemption from fault, but the size of those virtues they were possessed of," a sentiment in which there is much truth; but the more you think over it the more you will find that perfect honesty is a virtue of such size, a gem so rare, that it is not to be found anywhere, but is to be perpetually and earnestly sought after. Professor Wendell Holmes, American anatomist, and most pleasant of writers, tells us how

comes "Timidity, and after her Good-Nature, and last of all Polite Behaviour, all insisting that truth must *roll*, or nobody can do anything with it; and so the first with her coarse rasp, and the second with her broad file, and the third with her silken sleeve, do so round off and smooth and polish the snow-white cubes of truth, that when they have become a little dingy by use, it becomes hard to tell them from the rolling spheres of falsehood."

If we consider the three learned professions we shall find that in all of them there are incentives to truthfulness, and peculiar provocations to the reverse. The lawyer has often to practise special pleading, which may possibly, in some instances, weaken the moral antipathy to wrong; but he has to study from the commencement the abstract principles of law, and the phases of its development, and learns as a judge to balance evidence independent of emotion. Clergymen, in the individual exercise of their profession, have before them the highest ideal; but bearing on them is the unhappy fact that in ecclesiastical organizations, as such, abstract truth or error has no *locus standi*, but every consideration yields to the question of accordance with the laws of the church. As to medicine, I have already touched on the difficulty of being truthful in the practice of the profession; but, on the other hand, in the search after general laws, authority is now-a-days armed with less persecuting power than formerly, and freedom is enjoyed in scientific inquiry.

Returning then to the subject of scientific accuracy:

the physician is set face to face with nature; and all correct treatment of disease must be founded on an accurate knowledge of pathological changes. If your practice be not so founded, it will be quackery: and the public and the state are to blame that the opportunities of arriving at a correct pathology are not what they ought to be.

There are two senses in which pathological anatomy is the foundation of correct practice. In the first place, the profession, as a profession, could have no knowledge at all of any pathological change without studying morbid conditions after death. That is to you self-evident; but the general public have never caught hold of the idea properly, or they would take more care that the greatest possible facilities should be given for the prosecution of inquiries on which their own health ultimately depends. But let the public listen to this further statement, which you will all recognise as true, though some of you will forget it as time rolls on—that the practice of each individual practitioner is trustworthy only when he makes use of frequent opportunities of examining after death to verify and supplement his judgments where they have been right, to test his guesses and his suppositions that he may see how far they have accorded with fact, and most of all to correct the numerous errors into which the wisest and the most experienced continually fall.

We talk of the progress of medicine; but what an enormous amount of distress might be alleviated if that

which is known could be brought to bear in every instance in which it is applicable, or even in the majority of instances. To this end continued pathological observation must be conducted by every practitioner; and it is because the blame of the neglect of this lies much more with the public than with the profession that I venture to point out what happens when verification of diagnosis is neglected. Let us try to trace the history of a medical career in which this fault is committed. A graduate has been accustomed in his studies to have series of cases brought before his notice, of which the most prominently impressed on him have got well, and have seemed thereby to show that the evil had been accurately recognised and successfully combated. Others, likewise distinctly remembered, have got worse and worse, till they have ended fatally; and in those cases a proper investigation afterwards has taught numerous lessons which could not fail to impress the thoughtful observer. And if, besides all those, there have been, as there must be, numerous other cases which have not been rounded off to a dramatic conclusion of success or tragic close, but have lingered on in an unsatisfactory way, or disappeared from observation none the better; the exigencies of teaching, apart from the operation of any subtle and unconscious instinct of human nature in the mind of the teacher, tend often to throw such cases into the background, while their absence of sensational interest leads the student to leave them there to be forgotten. The graduate passes, as many of you are about to do, into general practice on his own

account. Then how great is the change! The acute cases which were so instructive in hospital no longer form the staple of his experience, and the chronic cases no more like meteors disappear from view. He has these disadvantages to cope with—namely, that in his successful cases, as will always happen, he is in a certain number of instances deceived by the circumstance that the fortunate issue has not in reality been aided by his treatment, or that the treatment has accidentally suited a condition other than the presumed lesion against which it was directed; in fatal cases he seldom has the opportunity afforded him of proving the opinions on which he has acted, and when the opportunity occurs he learns to consider it a trouble to utilize it; while, as for the vast number of cases that seem to get neither greatly better nor worse, they become inevitably, as time goes on, a lighter burden on his conscience, are set down as among the things that "no fellow can find out," and kept as quiet as may be with a variety of palliatives. What wonder that such a man falls into a humdrum routine!

Suppose, in obscure cases, you exercise your reasoning powers to the best of your ability; you form the theory which seems most probable; but you have no means of testing it; other cases occur similar in much to those which have been already seen, and you apply the unproven theory with all the strength of conviction, and so keep adding to what you call your experience—never verifying, and perhaps altogether wrong in your ideas as to what had really happened in the interesting cases on which you have built.

Will it be remarkable if your notions become crude, if your own belief in pathology and in precise diagnosis become dulled, and your practice degenerate to a stupid superstition? This picture is by no means an altogether imaginary one. It is the record of what I have seen. The cure is to be found in the increase of facilities for comparing the theories formed in attendance on the living with the revelations that are offered by the dead; and that is a matter which rests with the general public.

The general public is a vague and not altogether satisfactory body to deal with. It is possible to have the greatest respect for your fellow-men individually, and have little for the general public: and justly so; because the opinions, passions, and prejudices that pass most current in the throng are by no means the secretly cherished and better judgments of the individuals who compose it. We do not air most blatantly on all occasions the wisdom which we privately think the best; I fear we should be prigs if we did; but so it happens that it is something a good deal worse than our best by which in our social relations we influence others and are influenced. We must also take into consideration that when we analyse the characters of individual men, we find that no man is wise in everything, and that most are wise in reference to things within a very limited compass. Yet, as it is the property of truth to keep ever sapping the domain of error, there is an always increasing number of truths and half-truths which gain the assent of the majority of men. From such

considerations as these, it arises that public opinion is often the foolish offspring of passion and prejudice, especially with regard to mere passing events; and yet, with regard to permanent matters, it keeps slowly and lumberingly, but very surely, moving on at a respectful distance behind the heels of wisdom. We are bound, therefore, in those professional matters with regard to which it would be better for the public to be liberated from prejudice, and be more fully informed, we are bound to keep hopefully pointing out the things which our training brings specially under our notice, and so endeavour by the one thing in which we are wise to make up for the many in which we are foolish.

As to the propriety of the public affording facilities to medical men to do their duty in the matter of making certain the cause of death in every case, it is to be frankly admitted with satisfaction that, in this, Scotland is far ahead of some other parts of the British Isles. I doubt, however, if there is anything like a proper conception of the fearful way in which the public suffers when the duty in question is neglected by medical men.

The public has to learn that an unskilful practitioner is simply a waster of human life, and that the public itself is but a bad judge of the waste of its own life which may take place. The popular prejudice against a custom thousands of years old in royal families is the cause of an enormous annual slaughter among all ranks, not the less real because it is impossible to compute.

It may be further mentioned, that it is at least supposed that the government statistics, made at considerable expense, of the causes of mortality, are of some use ; yet it is an obvious fact, of which I have had abundant experience, that the returns which medical men have, under compulsion, filled up, stating causes of death, are in large part utterly worthless, not from any wilful dereliction of duty on the part of members of the profession, but because information is asked which they are not in a position to give. The schedules sent out by the registrar for certification of cause of death ought to demand whether or not a post-mortem examination has been made, and the sanitary department ought to keep the results obtained in cases where such examination has taken place, completely separate from the comparatively worthless returns of cases in which there has been none.

Moreover, when it is considered what pains are taken to secure accurate returns of causes of death in the army, and when it is remembered what a very large number of the practitioners engaged in civil practice hold appointments in a great variety of public institutions, one would think that it only required a proper knowledge of the issues at stake to rouse the public to the consideration of its own safety, and to extend in some measure military methods to civil practice, so as to develop a more thorough knowledge of their profession among all ranks of medical men, and save the lives of rich and poor.

I desire to use this opportunity to say one word about

pathological museums. They are the means of furnishing permanent and accessible records of remarkable phenomena, and are even more useful in affording comparison of different stages and varieties of disease one with another, There are no doubt certain matters connected with the general appearance of morbid textures which are better observed in the recent condition ; but there is much more which cannot be seen to advantage, nor indeed studied at all, except in carefully designed preparations permanently preserved.

Now, the great promoters of the art of displaying structure without desiccation were William and John Hunter, two Lanarkshire brothers. The museum of John Hunter, the property of the College of Surgeons, London, is continually and abundantly added to in a manner which would be highly satisfactory to its founder. The museum of William Hunter, a wonderful collection, embracing books, engravings, paintings, coins, and objects of natural history, was bequeathed to this University, and finds in Professor Young an enthusiastic curator ; but its circumstances are most unfortunate as regards its anatomical and pathological department, the department which is most closely connected with the reputation of its founder. This interesting collection, made by the elder of the two brothers, who had the merit of teaching to his younger brother the art, is not, like the collection of John Hunter, a living centre which gathers to itself the best of present work ; and this University is at the present moment almost powerless to

make it so. But there can be no doubt that Glasgow ought to be the seat of one of the finest, most actively increasing, and most useful pathological collections in the world; and when I think of the public spirit of this great city, and the enlightened character of those who have it in their power to bring this about, I cannot doubt that the time will rapidly come when a great and successful effort will be made by the supply of funds, and by proper combination, to give to a science so important for the direct interests of the public as pathology is, the support in Glasgow which it ought to enjoy. We require much extension of accommodation in our medical school, so rapidly do the wants of medical teaching develop; and a special representation of pathology on our staff is greatly to be desired, as well as an united medical museum, to which not only students may have liberal admission for purposes of study, but medical men may resort from all parts, both for their own immediate benefit and also to help them in work by which they may enlighten others.

In the path of a progress of which we can have no fear as to whither it will lead we must not halt; and it is with pleasure, therefore, that I take this opportunity of attracting attention to an important advantage added this spring to our medical school by the appointment of the able medical superintendent of the Royal Asylum of Gartnavel as University Lecturer on Insanity. I trust that when another year comes round our senior students will mark their appreciation of the important privilege

thus offered them by joining in numbers the class which Dr. Yellowlees is prepared to open.

Graduates, on you we depend for further advance. It is for you, by earnestness and honourable work, to reflect new credit on your Alma Mater. I ask of you, wherever you go, to preserve for her a kindly regard. To you who go to foreign countries I would say, do not forget her museums; and all of you be assured that among your old teachers you will ever find a sincere desire to help you in the pursuit of knowledge.

Robert MacLehose, Printer, 153 West Nile Street, Glasgow.