An introductory lecture delivered at King's College, London, at the opening of the medical session, October 1853 / by William Augustus Guy.

AN

INTRODUCTORY LECTURE

DELIVERED AT

KING'S COLLEGE, LONDON,

AT THE

OPENING OF THE MEDICAL SESSION,

OCTOBER, 1853.

BY

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By the same Author.

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PRINCIPLES OF FORENSIC MEDICINE.

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GENTLEMEN,

IT is now eleven years since I was first called upon, as one of the Medical Professors, to deliver the customary Annual Address, and seven years since it devolved upon me, in virtue of the office I then held of Dean of the Medical Department for the year, to discharge the same duty. Once more I have the same agreeable task to perform; and this time, again, it is not in my official capacity as Dean of the Medical Department, but simply as one of the general body of Medical Professors, deputed by my Colleagues to open the Medical Sessions (winter and summer) by the usual Introductory Lecture.

I would fain hope that, with the proverbial advantage of practice in the performance of this duty, my increased experience as a teacher, and a somewhat prolonged tenure of the office which I have the honour to hold, will add some weight to the observations I am about to address to you.

I trust, too, that I shall not be disappointing your expectations when I state, that the great object which I wish to keep in view in this Lecture is plain practical utility, and, in an especial manner, the advantage of those pupils who have so lately joined us, and who are now attending their first Medical Lecture within these walls.

To such of our pupils as are now resuming their attendance upon Lectures, and still more, to the remainder of my audience, many of the remarks I am about to make must needs appear trite and commonplace. But I am quite sure that their own recollection of the time when they themselves first sat in a strange lecture-room, within strange walls, surrounded by strange faces, perhaps in a strange city, perhaps, also, far away from relations and friends from whom they had never before been so completely separated, with parting words of affectionate advice still fresh in their memory, and the confusing noise of a populous and busy city ringing in their ears,—their own recollection, I say, of that time of strangeness and isolation, will plead my justification if I address myself mainly (at least in the first part of this Lecture) to those new comers to whom words of kindly welcome must be so grateful, and words of advice and encouragement so necessary.

It is true that time and habit are the only effectual cure for those feelings of strangeness and isolation—of utter solitude amid busy crowds—which press so painfully on the freshman; but it seems by no means impossible to make such a use of the present opportunity as may moderate, though it cannot altogether remove, those feelings. For, mixed up with them, and adding to their intensity, it is easy to imagine a certain confusion and perplexity springing out of the contemplation of the number and variety of the subjects which the student is expected to study, understand, and recollect; and it is but natural that he should feel some misgivings, lest his talents should prove unequal to the acquisition of so large an amount of knowledge. Now, the best way to moderate, if not to remove, such misgivings, is to pass the several subjects of study in review; to consider them one by one; to marshal them in their proper order; to show that the time allotted to them is sufficient; to point out how one study paves the way for the more easy comprehension of that which is to follow; and to indicate the provisions which have been made to assist the student in his difficulties.

This done, there will still be time to offer some remarks on

the character of the profession for the practice of which this course of study is the preparation.

In pursuance of the first part of my plan, I propose to take the several courses of lectures, and subjects of study, according to the Sessions, winter and summer, in which the student is expected to attend them.

The subjects of study in the first winter session, which, for the young student, commences this day, are Anatomy, Physiology, and Chemistry—subjects, I need scarcely remind you, of vast extent and importance.

Of these, the first two, Anatomy and Physiology, are felt to be too extensive, too crowded with minute details, and too important in their bearings on the Practice of Surgery and Medicine, to be mastered by an attendance on a single course of lectures, even though assisted, in the case of Anatomy, by the studies of the Dissecting-room. Accordingly, the student is required to attend a second and a third course of each in his second and third winter sessions.

Chemistry, too, though its direct practical applications for purely medical purposes are not so numerous, or of such constant occurrence, as those of Anatomy and Physiology, is far too large, and far too important a subject to admit of being learnt by an attendance on a single course of lectures. Accordingly, the Medical Professors have always recommended the student to attend a second course of lectures on Chemistry in the second winter session; in this respect anticipating the examining bodies, who are still satisfied with a single course.

Of the three courses of lectures which I have specified, the first, *Anatomy*, treats of the conformation, relative position, and mutual relations of the several parts of the body; the second, *Physiology*, of the minute structure and functions of its several component textures and organs; while the third, *Chemistry*, enters into the same minute description and analysis of the composition and properties of all bodies, animate and inanimate, comprising the several component parts of the human body itself, as well as of the substances, whether drawn from the mineral, vegetable, or animal kingdom, which exert

an influence upon it. This course of lectures also comprises a description of the forces which produce changes in matter, and of the laws which preside over the production and distribution of those forces—in other words, of that large and interesting division of science which is usually comprised in the one phrase, Natural and Experimental Philosophy.

But, besides attending these three Courses of Lectures, the student will be required to devote a portion of his time, under the advice of the Professor of Anatomy, and with the assistance of the Demonstrator and Assistant Demonstrators, to the work of the dissecting-room. Nor is this all; for the regulations of the examining bodies require an attendance on the Surgical Practice of the Hospital, including the Surgical Clinical Lectures delivered once in every week.

Now I admit that an attendance on three Courses of Lectures, and attention to two distinct practical pursuits, coupled with that amount of reading which is absolutely necessary to the full apprehension and recollection of what you have been taught in the course of each day, does make large demands on your time, and cannot fail to keep your attention fully on the stretch. And it is quite obvious that, in order to profit by these opportunities, you require the aid of suitable arrangements in respect of the hours of attendance, on the part of the authorities of the College, and of methodical distribution of time, on your own parts.

The Professors, on their side, have not been unmindful of their duty towards you; for they have so arranged the hours of attendance in the Lecture-rooms, in the Dissecting-room, and at the Hospital, as not only to avoid encroaching on the evening, which ought to be devoted to reading, but also so as to afford a reasonable interval for the work of dissection.

The present arrangement is this:—The Anatomical Lecture begins at nine o'clock, and terminates at ten, when the service of the Chapel takes place for the pupils of all the departments. The time from a quarter-past ten till half-past one—an unbroken interval of more than three hours—is given up to the labours of the Dissecting-room. At half-past one the attend-

ance at the Hospital begins, and the visit is finished in such time as to allow of your attending the Chemical Lecture at three o'clock. The interval from four to five is taken up, on four days in the week, with the lecture on Physiology, which brings the labours of the day for students of the first year, to a close.

The alteration of the hour of the Physiological Lecture from a quarter-past twelve to four o'clock, which was made last winter session, I cannot but consider as one of the most important changes in our arrangements that has yet taken place. It leaves a sufficient interval for the work of the Dissecting-room, and obviates the necessity, which formerly existed, of hurrying from the Physiological Lecture-room to the Wards of the Hospital. The change is also, I am happy to say, as acceptable to the Professors themselves, as it is beneficial to the student.

Still, even under these improved arrangements, it is not to be denied that the amount of labour imposed on the student during his first winter session is considerable. For eight hours consecutively (supposing him to be engaged in dissecting), his attention is kept upon the stretch (with the exception of two days in the week, when there is no lecture on Physiology, on one of which two days there is also no lecture on Chemistry); and when the labours of the day are over, it will still be necessary to devote at least a part of the evening to study.

Nevertheless, the experience of our most industrious students, and of those who have been successful in the competition for Scholarships and Prizes, proves that the amount of labour required of them is not greater than mind and body can bear, without injury to health. Perhaps one reason why this succession of studies is not found in practice to be quite so overwhelming as, at first sight, it would seem likely to be, is that the studies themselves are full of interest and variety; and that all these lectures, without exception, are so largely illustrated by the objects described, or by graphic representations of them, that the mind is not subject to that strain which often tries it so severely when the objects of its study

are not visible or tangible, and when a constant effort is required to realize a series of abstractions. This I conceive to be the reason that, setting aside certain peculiar risks to which health and life are occasionally exposed in the Dissecting-room and at the Hospital, the medical student suffers so little by the very great and continued demands which are made upon his attention.

But though the subjects themselves are interesting, and the method of instruction such as to convey the greatest amount of knowledge with the least strain upon the mind, the very extent of the knowledge which is sought to be imparted, and the multiplicity of the details involved, are such that some provision for rendering continuous assistance, and affording advice easy of access to the student, at his first entry upon his studies, seems absolutely necessary.

This assistance and this advice the Professors seek to provide by the appointment of a Resident Tutor, to whom the young student may have ready access in his difficulties, from whom he may obtain friendly advice as to the best mode of pursuing his studies, and who, by examinations held at short intervals, may refresh his memory with regard to the subject-matter of the lectures he has most recently attended. I may take this opportunity of mentioning that similar examinations are also held at short intervals in all the classes; and are believed to be of the greatest advantage to the student.*

Before I pass on from the subjects of study in the first winter session to those of the subsequent sessions, I would pause for a moment to insist on the paramount importance to the student of aiming, at this early stage of his career, at the formation of regular and methodical habits of study. What the Professors have done for him, by appointing fixed and convenient hours for attendance in the Lecture-room, in the Dissecting-room, and in the Wards of the Hospital, he should

* In the majority of the classes every fourth examination is a written one, of which the results are made known; and a limited number of special certificates is awarded at the close of each session to those students who have shown the greatest proficiency.

do for himself by laying down a plan of study for the evening. The principles which ought to preside over such a plan are obvious. Three leading subjects—Anatomy, Physiology, and Chemistry—have occupied his attention during the day; and, if he would profit by what his lectures have taught him of these subjects, he ought to follow up what he has heard in the theatre by study in the closet; either dividing the time which he can command in the evening equally between them, or (what will suit most tastes and capacities better) devoting two evenings of each week to each.

The Professors will themselves recommend the books which they deem best suited to supply the wants of the student. They will also be ready to advise him upon the important subject of *note-taking*, concerning which I will myself only hazard one or two general remarks, with the distinct understanding that, being general, they shall be subject to correction at the hands of the individual Professors, who must be understood to be the best judges of the method of procedure which best suits their own particular subjects.

As a general rule, then, I am opposed to the system of note-taking, believing that its tendency is to divide and weaken that attention which ought to be concentrated upon the descriptions and observations of the teacher. Moreover, in the case of purely descriptive subjects, in dealing with which the teacher does not even profess to impart to the pupil any knowledge not to be found in the books which he himself recommends, it is not to be doubted that a close attention to all that falls from the lips of the teacher will enable the student to carry away with him more knowledge, and that in a more available form, than can possibly be committed to writing. But, in attending Lectures upon subjects about which I have yet to speak, and which deal not with mere descriptions of tangible and visible objects, but with broad principles and comprehensive theories, and the results of the teacher's own personal experience on matters about which there is of necessity much room for difference of opinion, notes taken with discrimination—and especially on subjects to which

the teacher is known to have devoted much of his own attention, and upon which he entertains strongly marked opinions—may be of the greatest possible service.

You see, then, that, as a broad general rule, I would condemn the taking of notes, when the subject is purely descriptive, and restrict its use even when the subject is one that involves great difference of opinion, within rather narrow limits. There is, however, one case which forms an obvious exception to these rules. If a student is conscious of a difficulty in fixing his attention when his own hands are not employed in the act of writing; or if, from previous habit, or from some peculiarity of character, he recollects best that which he commits to paper, *then* he must resort to the expedient of note-taking.

In taking leave of this topic, I must again remind you that my observations are intended to be perfectly general, and that the rules I have laid down must, in any case, be subject to revision at the hands of your teachers individually.

I have only one other observation to make respecting the studies of the first winter session. Though the interval from a quarter-past ten o'clock till half-past one is specially set apart for the work of the Dissecting-room, still some little time must elapse before you will be prepared to take the scalpel in hand, or before being supplied with a subject for dissection. There will also be intervals more or less considerable between one act of dissection and another. Now these intervals cannot be better employed (especially in the case of those pupils who reside at a distance from the College) than in the medical library, where they can consult books and plates which they would find it inconvenient to purchase, and where copies are also kept of the text-books in common use. They will also be allowed to take home with them such books as are not in constant demand. Should their studies, at any time, take an extra-professional turn, I may remind them that, as matriculated students of the College, they have access to the general library.

I have said nothing hitherto of necessary relaxation and

reasonable amusement, without which, as a familiar proverb tells us, young men run the risk of becoming victims to that dulness which is highly unfavourable to the acquisition of knowledge. You will find that provision is made for such reasonable relaxation by the omission, on the Saturday afternoon, of two out of the three Lectures which you are required to attend; and I may add that the facilities for healthy exercise and rational and innocent amusement afforded by this metropolis are such as to leave without excuse those who seek for entertainment in unworthy occupations and pursuits. I may add that among the many advantages attendant upon the facilities for locomotion we now so happily enjoy, not the least is the opportunity afforded of turning to account such short intervals of leisure as the Christmas week, set down in our calendar as a holiday, affords. The longer interval of one month, from the end of the winter to the beginning of the summer session, and the long vacation of two months from the end of the summer to the beginning of the following winter session, also afford ample means of refreshment to the diligent medical student.

The first winter session passed in steady application to the study of Anatomy, Physiology, and Chemistry, the first summer session also brings with it its curriculum of three courses of Lectures—Botany, Materia Medica, and Midwifery. The first of these, Botany, bears this resemblance to the subjects which will have engaged the attention of the student in the winter session immediately preceding, that its importance is derived chiefly from its practical application to other studies. As the sciences of Anatomy and Physiology lay the only secure foundation for the subsequent study of Surgery and Medicine, and the other branches of practice which are connected with them, so do Botany and Chemistry supply an equally necessary preparation for the study of the means which we possess of remedying or palliating the diseases to which the human frame is subject. These two sciences, then, find their first practical application in the Lectures on Materia Medica, which, according to the regulations of the examining

bodies, must be attended in the first summer session. The transference of this course of Lectures from the first winter session—where it was not merely out of place, as anticipating the study of Botany, and accompanying, instead of following, the study of Chemistry, but also an inconvenient addition to studies already sufficiently numerous—is one of those useful changes for which we have to thank the Court of Examiners of the Society of Apothecaries. The first course of Lectures on Midwifery, which must also be attended in the same session (it was formerly, like Materia Medica, a winter course), may, in like manner, be considered as the first application to practical purposes of the course of Anatomical Lectures attended in the previous winter session. The Hospital studies of the first summer session are still limited by the regulations of the examining bodies to the Surgical Wards of the Hospital, and the Surgical Clinical Lectures. But though it is not necessary that you should obtain certificates of *medical* attendance during the first year, you ought certainly to avail yourselves of every opportunity which offers of attending in the Medical, as well as in the Surgical Wards.

The scheme of Medical Education would be theoretically more perfect if the first winter and first summer session had been devoted exclusively to what may be termed the elementary and preparatory Medical Sciences—Anatomy and Physiology, Chemistry and Botany; but such a scheme would presuppose a longer course of study than some of the examining bodies have deemed necessary.

In the second winter session (for we have now arrived at the second academical year) the student is required to attend a second course of Anatomy and a second course of Physiology; and (if he follow the earnest recommendation of the Medical Professors) a second course of Chemistry. Thus far his studies are but a repetition of those of the first winter session; but, in addition to these, he is required to attend his first course of Medicine, and his first course of Surgery, for the right understanding of which the Lectures of the first winter and summer sessions are supposed to have fully prepared him.

He is now also expected to attend the Practice of Medicine as well as the Practice of Surgery, and Clinical Lectures on both subjects, in the Wards of the Hospital.

When speaking of the Lectures on Physiology, I pointed out the great advantage which must result to the student from the recent change of hour, from a quarter past twelve in the morning to four in the afternoon ; and I must now add that a further change conducive to his comfort and convenience has been made, which consists in fixing the same hour on alternate days for the Lectures on Medicine and Surgery, instead of their following each other, without any pause or interval, on the afternoons of the same days.

The course of study laid down by the examining bodies for the second summer session, comprises—*Practical Chemistry* (which may be said to bear the same relation to the Lectures on Chemistry, which the student had already attended in the first and second winter sessions, as the work of the Dissecting-room does to the Lectures on Anatomy), a second course of Midwifery and a course of Forensic Medicine, with the practical studies (Medical and Surgical) of the Hospital.

In the third winter session, the prescribed course of study comprises a third course of Lectures on Anatomy and Physiology, and a second course of Medicine and Surgery, together with the Practice of Medicine and Surgery within the Wards of the Hospital.

With this third winter session, the period of study for the majority of medical students terminates. But it must be understood that this is the least attendance which will suffice to prepare the student for his examinations at the Hall and College ; and it must be quite obvious that this period of less than three years is wholly insufficient, except in the case of those pupils who have previously passed, with profit, through a somewhat prolonged period of apprenticeship. In all other cases, the Professors of this College recommend a course of not less than four years, of which the last portion should be devoted chiefly to the practical studies of the Hospital. To pupils so situated, the Professors would recommend an at-

tendance on a course of Comparative Anatomy in the third summer session—an attendance which is required at the hands of those who are about to graduate at the University of London, or to enter the medical service of the army. I may also mention, in this place, that the Army Medical Board require from the student certificates of having attended a course of lectures on Logic; for which course arrangements were very kindly made, during the last winter session, by Professor Browne of the Department of Literature and Science.

The course of Medical Instruction, which I have represented as extending over three winter and two summer sessions, must be understood to be that prescribed by the authorities of the College of Surgeons and Apothecaries' Hall, with the proviso, in the case of the Hall, that the student have completed an apprenticeship of five years; and, in the case of the College, that he has been engaged in medical studies for a period of at least four years.

To those who are now beginning their medical education, without having been previously apprenticed, four years of medical study is indispensable.

Now, it may happen, and indeed it has happened more than once in my own experience, that a young man comes to London to enter at once upon the course of medical education which I have described, without having been apprenticed, and yet in doubt whether he may not hereafter find it expedient to engage in general practice. To meet this case it was necessary that we should make arrangements for effecting an apprenticeship, which should not interfere with the contemplated course of proceeding. Such arrangements, I am happy to say, we are prepared to make. They will comprise instruction in Practical Pharmacy in the Dispensary of the Hospital, which instruction may be most conveniently obtained during the first and second, or second and third summer sessions.

In his excellent Introductory Lecture delivered last October, Dr. Todd made some allusion to the arrangements

then recently made by Dr. Beale for imparting a practical knowledge of the tests most in use at the bedside, as well as of the use of the microscope, and very properly recommended his short courses of Lectures to the notice of our students. I am happy to be able to inform you that Dr. Beale's appointment as Dr. Todd's successor in the chair of Physiology, jointly with Professor Bowman, will not deprive us of this most useful addition to our means of practical instruction.

I have not yet said anything of the preliminary education of the medical student; though I feel that that is a subject of considerable importance.

All the examining bodies have shown a very laudable anxiety to promote a liberal education on the part of the future medical man. For many years past, the lowest standard of medical education has supposed a competent knowledge of the Latin tongue, and some recent regulations of the Society of Apothecaries and College of Surgeons show a desire to encourage, if not to compel, a higher standard of attainment. The Matriculation Examinations of the older Universities, and of the University of London, in which many of our students are directly interested, also aim at securing a high standard of scholarship.

It is evident, indeed, that all our examining bodies are fully impressed with the conviction that the medical student ought, at his very entrance on his professional career, to take rank with gentlemen, by sharing with them their knowledge of the liberal arts and sciences. By his classical and mathematical attainments, brought with him from school, and enlarged by subsequent study, the medical man is, on the one hand, brought into a sort of fellowship with that large body of educated men, which consists of the members of the two other learned professions, and of those who have no other employment than such as the care of their own property may create for them; while, on the other hand, by his scientific and purely professional studies, he is able to sympathise to the full with men devoted to the pursuits of science, and with whom he must needs share more than one of his attainments. Thus does he continue to occupy that intermediate position, between

literature and science, which drew forth from the most eminent scholar and critic of his day, the deserved eulogium, that "The medical men of his time were the most enlightened professional persons in the whole circle of human arts and sciences." That we may still deserve so favourable an expression of opinion, we must keep the standard of previous education at least as high as the standard of purely medical proficiency.

But those rules and regulations of our examining bodies which insure this union of a good general education with sound medical instruction, are second in importance to the arrangements which they have caused to be made for giving greater extension to that practical element which has always played so leading a part in all our schemes of medical education. It would be difficult for us to conceive an Anatomical Theatre without a Dissecting-room attached to it; or courses of Medicine and Surgery without an hospital for clinical instruction; or Lectures on Materia Medica without facilities for practising the operations of Pharmacy. We are now so familiar with these things, that we should feel it very strange to be without them; and we, therefore, at once recognise, in the recent addition to our curriculum of a course of Practical Chemistry, an extension of practical teaching in perfect keeping with all our former precedents.

This latest addition to our curriculum has left little to be desired. For every important branch of theoretical instruction, there is now a corresponding facility of practical attainment. For the Lectures on Anatomy, the Dissecting-room; for the Lectures on Botany, field excursions; for the Lectures on Materia Medica, the opportunity of compounding and dispensing medicine in the Hospital; for the Lectures on Chemistry and Toxicology, the practical laboratory; for the Lectures on the Practice of Medicine and Surgery, the Wards of the Hospital; for the Lectures on Midwifery, a special department connected with the Hospital. Thus does theoretical instruction, both in the regulations of the examining bodies, and in the provisions of every well-regulated school of medicine, go hand in hand with facilities for acquiring practical experience; and this growing appreciation of the importance of

practical teaching exhibits itself in the extent to which of late years an actual exhibition and demonstration of the objects we have occasion to describe, has been made to supersede mere verbal descriptions of the objects in question. To such an extent is this system of demonstration now carried, that no medical school can be set on foot without a very considerable expenditure, or maintained in a state of efficiency without a very liberal annual outlay.

In the efforts which they have made to render the system of medical education complete, and, above all, practical, the examining bodies have been steadily supported by the principal places of medical education. Not only has each fresh requirement of the Hall or College been met by the requisite arrangements for teaching, but the teachers have gone beyond the letter of the laws laid down for their guidance, and have been constantly originating new and improved educational machinery.

These efforts to improve the education of a body of professional men, with whose proficiency the interests of the public at large are felt to be peculiarly bound up, has procured for the principal medical schools, not only the approbation of the profession itself, but the warm sympathy and welcome patronage of public-spirited and benevolent persons belonging to other professions. Of the interest thus felt in medical education, this College has lately had many striking proofs. The almost unprecedented success of the appeal so lately made to the public, for the means of erecting a new and more commodious Hospital—an appeal in which the interests of the Hospital as a place of medical instruction were put forward quite as prominently as its claims as a charity—may be taken as a proof of the extent of the sympathy of which I have been speaking. Of the sincerity and warmth of that sympathy in the case of individuals, the zealous and unremitting services of the gentlemen who constitute the Committee of Management of the Hospital, and among whom are to be found some of the most liberal contributors to the funds of that Institution, are conspicuous instances; but I wish especially to speak of

that anonymous donation of 5000*l.*, which may be said to have laid the foundation-stone of our Hospital fund, and of that other munificent donation of like amount devoted by that venerable friend of the College, Dr. Warneford, to the foundation of scholarships. Attaching, as it would seem, equal importance to a good preliminary education, and to practical knowledge acquired in the Wards of the Hospital, Dr. Warneford has founded two orders of scholarships,—the one intended to promote and reward sound classical and mathematical attainment in those who are about to embrace the profession of medicine ; the other to reward such resident pupils as shall most distinguish themselves, during their medical education, in the clinical studies of the Hospital. One object, however, which this excellent friend of the College had especially in view, in these, as in his previous endowments, was the promotion of that strict and inseparable union of religious and secular knowledge which this College has always maintained to be alone deserving the name of *Education*. Without this essential element of religious teaching and religious observances, the founders of this College proclaimed, what their successors have continued to maintain, that there may be very efficient instruction, very considerable enlightenment, very distinguished success in the competition for honorary distinctions, but there can be no *Education* in the highest and truest sense of that term.

I have now stated, in general terms, what provision this College has made for carrying out the large and comprehensive scheme of education devised by our several examining bodies. I have intimated that we have not only kept pace with the requirements of these authorities, but have coöperated with them in the very spirit of their enactments, by rendering our teaching year by year more and more practical. Something still remains to be done in this direction, even in the College itself ; some of our arrangements, though very far from inefficient, being less complete than we could desire (I allude especially to our Anatomical Museum, which is inconveniently crowded, and to our Practical Laboratory, which is less

perfectly lighted and ventilated than we could wish).* But the deficiency of which, for many years, we have been most conscious, is now happily in course of being repaired. Our Hospital, which has always afforded much less accommodation, both for patients and pupils, than we could have desired, is being rebuilt on so liberal a scale of space (whether we consider it as a charity, or as a place of clinical instruction), as safely to challenge comparison with any institution of similar extent. We have every reason to believe that the portion of the building now in progress will be ready for occupation next spring; and as, besides affording accommodation for nearly 100 beds, and supplying the pressing want of a commodious out-patient department, it will contain all the arrangements necessary for clinical teaching, we shall avail ourselves of the opportunity which its completion will afford, of making such improvements as may still seem to be called for. A spacious Dispensary, with convenient arrangements for giving instruction in Practical Pharmacy, is one of the improvements most obviously required.†

* The means of ob iating the first-named defect exists in two spacious rooms not yet fitted up; and the best mode of remedying the other inconvenience is under consideration.

† The portion of the building now in progress will consist of:—

1. A distinct out-patient department, containing rooms for the physicians, physician-accoucheur, and surgeons, with private rooms and surgeries attached; spacious waiting-halls, arranged for the classification of patients; and a Dispensary common to this department and the Hospital proper.

2. An accident-ward on the ground-floor, 70 feet by 24, to hold 13 beds; and two double wards of like dimensions on the first, second, and third floors, each double ward to contain 26 beds. The wards are either 14 or 15 feet high, and the quantity of space to each patient is, accordingly, either 1809 or 1938 cubic feet. The basement and attics might also be made to accommodate patients if required.

3. An operating theatre, to hold 300 pupils, and a post-mortem theatre, with several convenient small rooms attached for 50 pupils.

By retaining the principal portion only of the old building, till the remainder of the new building is completed, the Committee of Management would have no difficulty, after finding space for at least 150 beds, and adding to the accommodation of the resident officers, in placing one or more rooms at the disposal of the students.

In the course of the observations which I have now addressed to you, I have, I believe, touched upon most of the topics which belong to the scheme of medical education as now arranged by the principal examining bodies; and I think that the new student will have come to the conclusion, that the course of study he is required to pursue, though comprising many distinct subjects, is nevertheless so arranged for him as to make the acquisition of the necessary amount of professional knowledge easy. But he would greatly deceive himself if he supposed that without steady application to each branch of knowledge, as it is presented to him in the prescribed order of study, he can accomplish the lowest object at which it is possible for a young man to aim—the passing of the requisite examinations. The true object of his sojourn here as a pupil is the obtaining of such an amount of professional information, theoretical and practical, as shall enable him to practise the art of healing with credit and satisfaction to himself, with safety and advantage to his patients. Such knowledge, I need not tell him, is not to be acquired by those processes that are technically known as "*Cramming*" and "*Grinding*." At the best, these expedients can only prepare a man to pass an examination. They cannot supply that ease and self-possession at the bedside which arise from his having practical experience of the questions which ought to be put, the remedies which ought to be prescribed, and the operations which ought to be performed. This professional aptitude is never so well acquired as in youth, and nowhere so advantageously as in the Wards of an Hospital. But in order that you may be in a condition to profit by the opportunities of experience which are there provided for you, it is of the first importance that you should so economise your time and methodise your studies in the first years of your pupilage, that the remaining portion of your time may be devoted chiefly to practical studies within the Wards of the Hospital, and especially to the punctual and zealous discharge of the duties of the several offices which have been created with a view of affording to the greatest possible number of students the means of becoming personally

acquainted with professional duties. These offices, some of which entail residence within the walls of the Hospital, and the remainder demand a close and continuous attendance, amount in the course of the year to no less than 62 in number, and afford to that number of pupils, during periods of six months, not only very valuable opportunities of experience, but useful aid in forming those habits of punctuality and regularity which are of such value to the future medical man.

From all that I have said, you will infer that the education upon which you are about to enter is of a very extensive and varied character, combining large theoretical attainments with wide practical experience, and demanding, on the part of all who would profit by it, great method and regularity in the employment of their time. Now all experience proves that youth is not the period of life when habits of regularity are easy to acquire and to retain. Indeed a very large proportion of persons of every age are found wanting in these qualities, and are bound down to punctuality and industry by stern necessities which they do not dare to disregard, but of which the student is in happy ignorance. This being the case, it becomes no less an act of considerate kindness than a bounden duty incumbent upon the authorities in all places of education to surround the student with every possible safeguard, and to give him every possible assistance in carrying out those good resolutions with which he enters upon his career of study. Accordingly, following the example of our older universities, and, in our turn, setting an example to other medical schools, the authorities of this College have established a system of collegiate discipline, which they have extended and improved, from time to time, as occasion offered. The foundation of this system is laid in the ascertainment of the fact of the attendance, or non-attendance, of the student at the Lectures given, whether in the College or at the Hospital. Such attendance being duly registered, it becomes possible for the Professors to perform the duty imposed upon them by the examining bodies, of certifying that the student has complied with their regulations. In the absence of such a register of

attendance, I do not see how the Professors, in large schools, can avoid one of two dilemmas—the stating what is untrue to the injury of the public, or the withholding of certificates really earned by due attendance, to the injury of the pupil. As, moreover, certificates and testimonials of the greatest value to the student are often applied for, some years after he has completed his education, the possession of accurate registers of attendance will be seen to be of very considerable importance; and I have reason to believe that the testimonials which issue from this place carry with them very great weight, because they are known to be based, not upon the recollection of the Professors—which might be imperfect, or even inaccurate—but upon faithful records to which we can at any moment refer. Our duty to the examining bodies, to the student, and to ourselves, has prompted these precautions.

These registers also enable us to check those first tendencies to irregularity which are often, for the student, the beginning of so much evil; as well as to furnish to parents, or others who have a claim to such information, at short intervals of time, faithful statements of the conduct of our students, as far as it can be inferred from their attendance at lectures.

This system of discipline (if acts of so much kindness and consideration deserve so stern a name) has, I believe, been administered in such a spirit as to remove from it every trace of harshness; in the spirit of gentlemen dealing with gentlemen; and in the sincere belief, on our parts, that the cheerful submission to such a system, in the spirit in which it was imposed, and is carried into practice in this place, is calculated to raise the student in his own just estimation, and to enhance the respect in which he is held by the public.

Having now passed in review the studies in which you are about to engage, alluded briefly to such collegiate arrangements as it was most desirable that you should be acquainted with, and made some mention of that system of discipline which obtains among us, I will conclude this Lecture by placing before you, as fully as my little remaining time will allow, the character of that profession for the practice of which

these studies and this collegiate discipline are intended to prepare you.

The knowledge which you will carry away with you from this place admits of application to three distinct purposes. First, to the cure of disease and the relief of suffering; secondly, to the prevention of disease and the preservation of health; and, thirdly, to the furtherance of the ends of justice by sound evidence given in Courts of Law, upon matters with which your professional education has rendered you conversant. Of this last application of your knowledge, I will merely observe that more than one of the examining bodies have felt it to be of sufficient importance to entitle it to be made the subject of a distinct course of Lectures. The second application of medical knowledge—to the preservation of health and the prevention of disease—though its importance is universally recognised, and though it enters into the programme of the examinations at the University of London, has not yet been made the subject of a distinct and separate course of Lectures. It is a subject, however, which has great claims upon our attention; and, I may add, that it is one which ought to commend itself especially to Englishmen. For it was in England, during the last century, that an English physician, Dr. Jenner, discovered the means of banishing Smallpox from the world, but a few short years after Captain Cook and John Howard succeeded in proving that two other frightful scourges of our race—the Scurvy and the Jail Fever—were amenable to preventive treatment. And it is in England, also, that the practice of Hygienic precautions among the great mass of the people has been revived with a vigour and success which have attracted the attention and provoked the imitation of other nations. In the case of the army and navy surgeon, the surgeon of the emigrant or merchant vessel, the Union medical officer, and the surgeons employed in our prisons, opportunities are constantly occurring of applying the principles of preventive medicine; but even the mass of medical men, in the ordinary practice of their profession, are not able, if they would, to separate the art of healing from the sister art of preventing

disease: for it rarely happens that the prescription which is intended to cure an existing malady, does not go hand-in-hand with the Hygienic advice which is calculated to prevent its recurrence. The two subjects of Hygiene and the Practice of Physic are, therefore, so bound up together, that in the few observations I am yet to make, I shall consider them as parts of one great Science and Art of Medicine, having for their object the preservation, improvement, and restoration of Health.

Of the Science of Medicine—by which I mean that collection of general principles which, when applied to individual cases, becomes the *art* of medicine—I would observe that, in order to its improvement and extension, we must bring to bear on the observation of disease at the bedside, the same steady industry and quiet perseverance which we had previously exercised in turning to account our opportunities of instruction at College and Hospital. That industry and perseverance are rendered necessary by the very nature of the science with which we have to do—a science which, like agriculture and political economy, deals constantly with variable and fluctuating elements.

The land which the farmer cultivates has its own peculiar soil, climate, and aspect; and though he prepares it for the reception of seed, year by year, in the same way, by the use of the same implements, he does not know in what state he shall find it when the seedtime arrives. It may be parched with drought, or deluged with rain. The seed, too, which he sows is not the same quality of seed which he sowed in any former year; and the crop, as it grows up, is exposed to its own peculiar combination of atmospheric influences, and reaped and gathered in, in weather over which he has no control. Yet from observations and experiments made under the influence of these variable causes, the general principles which make up the science of agriculture, and which constitute the farmer's guides to practice, must be deduced.

So also with the Science of Political Economy. The principles which are to guide the statesman in the practical work, or art, of legislation, or to justify the measures he may think

fit to adopt, have to be laboriously deduced from recorded facts which have been brought about by a great number of causes, acting with very variable intensity during the same periods of time. It may happen, for instance, that immediately after the passing of an enactment obviously calculated to promote the public prosperity, unforeseen disturbing causes spring up, and work so strongly in the opposite direction, that the beneficial effect actually produced is overpowered and masked. And, on the other hand, it is quite possible that measures calculated to produce a moderate increase of wealth may obtain a credit they do not deserve, in consequence of the supervention of some new and unexpected element of prosperity. At any rate, the introduction of this new element may have the effect of greatly complicating the problem we are anxious, as scientific men, to solve. Such an event, as we are all aware, has recently occurred in our own country. We have passed from a system of interference with the course of trade, and the operations of commerce, to a system of exactly the opposite kind, and we expected great results to follow. But the unexpected discovery of two territories abounding in gold has introduced a disturbing element of such force, that the important question—what has been the true result of our recent legislation?—does not admit of solution.

Now, the same causes which render the sciences of agriculture and political economy imperfect, and the arts of farming and government difficult, have to be encountered, and if possible overcome, by those who would perfect the science and the art of healing. Not, however, that the comparisons I have just instituted can suffice to give an adequate idea of the difficulties which beset the path of the inquirer after truth in the science and art with which we are occupied.

Take, in the first place, the object upon which we are to exercise our skill—the human body—what other object of study can be compared to it? Mark the variety and complication of its parts; the jealous concealment of its functions and processes; the individuality with which it is stamped even

at birth; the influence which sex, and age, and climate, and habits of life exercise upon it, even before disease, with its variable intensity, has seized it. How impossible is it that we should leave it so completely to itself as to learn the natural history of disease in the absence of all remedies! How difficult, therefore, to apportion to nature and art their respective shares of credit; how easy to attribute to art that which is really due to nature! Again, in all those cases (and they are very numerous) where one physician adopts one mode of treatment for a disease, and another another, how difficult to bring together a sufficient number of comparable cases treated by the rival methods, to enable us to determine which is right and which wrong!

And yet, though it is as impossible, as it would be unwise, to ignore, or overlook, these obvious sources of difficulty in the creation of a true science and art of healing, what encouragement to presevere in the attempt, do we not derive from the past history of our profession! If we have much to learn, we have at least laid a sure foundation for further progress in knowledge, by the discovery of the circulation of the blood, of the true theory of the nervous system, of the minute structure of all the more important organs of the economy, and of the normal chemical composition of the blood and the principal secretions. Great progress also has been made in the diagnosis or discrimination of diseases by the invention of the stethoscope, and by the careful study of such of the excreta as admit of examination by chemical tests or by the microscope.

The direction in which our progress has been least satisfactory (because in that direction we encounter in full force all the difficulties to which I have just briefly alluded) is the discovery of true remedies and right modes of treatment. We possess, indeed, some few remedies of undisputed efficacy, of which bark and mercury, with their preparations, are the best examples, and at least one infallible preventive of one loathsome disease, in vaccination for smallpox (supposing the preventive to be in universal use); and lastly, in ether and chloroform, the means of taking away the element of suffering from the most painful operations of surgery.

We too, as Englishmen, must feel it to be both a ground of satisfaction, and an encouragement to exertion, that so considerable a share of our greatest medical discoveries falls to the credit of our own countrymen. The discovery of the circulation of the blood by Harvey, of the true theory of the nervous system by Charles Bell, and of vaccination by Jenner, —whether we regard them as great scientific truths, or as discoveries admitting of the most important practical applications, —may fairly claim to take rank with those grand discoveries and inventions which have made such names as those of Newton and Watt immortal.*

Of the Art of Healing, as distinguished from the Science of Medicine, time will not allow me to say much. Indeed, its importance is so obvious, its necessity so great, its application so universal, its exercise so grateful, the indirect benefits it confers upon society as well as upon individuals so considerable, that to say anything in its praise seems almost a work of supererogation. You who are about to commence the

* Exception may perhaps be taken to this statement on the ground that the discovery of Newton and the invention of Watt afford evidence of talents of a higher order than the discoveries of Harvey, Bell, or Jenner. There is certainly some ground for this exception; but it ought not to be forgotten, that not one of these great medical discoveries admits of being tested and applied to practical purposes, by the aid of those mathematical calculations which played so conspicuous a part in the discovery of the true theory of gravitation. Apart from this accident of the theory, Newton's merit was the same as Harvey's. Where other men saw an apple *fall* to the ground, Newton saw one portion of matter *drawn* towards another. Harvey, in like manner, took his own original view of the mechanism of the circulation; and Charles Bell, by skilfully contrived experiments, succeeded in establishing the soundness of as novel a theory of the nervous system. The discovery of Jenner, though of greater practical value than either of the others, was, after all, one which demanded the least of that quality of mind which has been so aptly designated as *scientific insight*. The preventive efficacy of the vaccine virus was a known fact, open to general observation in a limited district; but Jenner had the merit not merely of seeing what his neighbours saw, but of advocating vaccination with rare courage, perseverance, and success, as a preventive measure admitting of universal application.

studies which are to prepare you for the practice of the art, no less than for the improvement of the science, of medicine, are not likely to be ignorant of the claims which both the Science and the Art have upon your feelings of respect and attachment. If Lord Bacon was right when he said that the true object and end of Science was "the glory of the Creator and the relief of man's estate," surely his words must be emphatically true of that Science which has for the chief object of its study the most perfect of all the works that issued from the hand of the Creator—of that *Art* which aims at preserving that work from injury, and of repairing it when it falls into disorder.

It may not be permitted to all of us to emulate the example of such men as Harvey, and Bell, and Jenner; but it is in the power of each and all of us to so practise the divine Art of Healing as to confer the greatest benefits on society, and to earn for ourselves the happy consciousness of having done our duty in that useful and honourable profession to which it has pleased God to call us.

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