**An introductory address to the students of the Calcutta Medical College, on the 15th June 1803 / by J. Fayrer.**

Captain R. J. Fayrer R.N.
from his Son
J. Fayrer

AN

# INTRODUCTORY ADDRESS

TO THE

STUDENTS OF THE CALCUTTA MEDICAL COLLEGE,

ON

THE 15TH JUNE 1863.



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BY

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NOTE.—For much of the information contained in this Lecture, I must express my acknowledgments to the following Authors:—MERYON; CHRISTISON; SPELLMAN; DEMULLER; BUCKLE; and PICKFORD.

# INTRODUCTORY ADDRESS

TO THE

## STUDENTS OF THE CALCUTTA MEDICAL COLLEGE.

*15th June* 1863.

GENTLEMEN,

IT is a custom, old as the Institution itself, to commence each Academic Year with an introductory address from one of your teachers; and on the present occasion, it has fallen to me to meet you for the purpose of inaugurating this, the 29th Session of the Medical College.

I should have been glad had it devolved on any other among my Colleagues, feeling, as I do, very sensible that I am but indifferently qualified for a duty of so much responsibility.

However, as I have neither the intention, nor option, of setting you the bad example of evading any duty that my position imposes, I shall ask your attention whilst I endeavour, in the short space of time allowed for the purpose, to lay before you, along with some other matters, a summary of what you have to do during your student life, until you become Graduates of Medicine.

I address myself chiefly to the beginners, but I hope to interest you all.

Some of you, no doubt, are here to-day from curiosity; many have been present on former similar occasions; a number, I trust, by your presence, declare your intention of entering seriously upon the study of Medicine, of laying the foundation stone of an

edifice, whose superstructure you hope some day to complete, of making the first step in a path, whose end, though distant, you trust, some day, safely to attain. You have, perhaps, no very definite notion of what you have undertaken ; let me try and give you an idea of that which lies before you.

I have no desire to discourage or dishearten you,—my object indeed should be quite the reverse, but I would state the matter plainly, and ask you to consider it well at the outset. Give it, as I trust you have already done, to some extent, your earnest thought, and then, having made up your minds, begin with a firm determination to persevere, being deterred by no difficulty or obstacle that may beset you on the way.

I have nothing to tell you of that has not been and may not be done by any one, but I warn you candidly that if you are not determined to work and put your shoulder to the wheel, 'twere better that this be your last, as it is, to many of you, your first lecture in Medicine.

The profession of which you are about to commence the preliminary studies, has for its object the preservation of health, the prevention and cure of disease, the alleviation of suffering, the lives, in short, and therefore the best interests of your fellow creatures. You will at once see how great are the responsibilities involved, how much will depend on the mode in which you profit by your opportunities and means of study here. Of these, I need hardly say, I trust you are prepared to avail yourselves by the devotion of your best energies and earnest attention.

In thus urging you, I am not unmindful, how deeply we, as your teachers, are also concerned. It is upon the doctrines and principles you learn in, and carry away from this place, that may depend the welfare and happiness, or misery, not only of yourselves, but of thousands now unknown to any of us. It behoves teacher and student ever to bear this in mind, and that it should incite each to a faithful performance of his respective duties.

The curriculum of your studies has been well considered and carefully laid down by the University of Calcutta, with reference

not only, to the attainment of Degrees in Medicine, but to the best method of making you progressively acquainted in detail with those branches of science that make up the sum of what is required in all well educated Medical men. Not one of these subjects, numerous though they be, is superfluous; each in its turn is to be well and carefully studied, not only as a simple and abstract branch of science, for its own sake, but with reference to others and in relation, especially, to its practical bearing on Medicine.

To fit you to undertake these studies profitably, to enable you to comprehend their object, scope and value, nay to render you capable of understanding their very nomenclature, it is necessary that you should have received a thoroughly sound preliminary education before you enter on your special training. This also, it has been the design of the University to provide for, by enacting that each of you, before entering College, as a student of Medicine, shall have passed the Entrance Examination in Arts. Now, this is a subject of much importance; for, it is manifest that if you are not so prepared, your difficulties must be greatly enhanced, not only because you would be incapable of comprehending the language and terminology of science, but that your minds, untrained by previous education, would be incapable of receiving, or retaining the facts with which they should be stored.

In this matter, I think, that notwithstanding the good intentions of those who supervise your education, there is still a shortcoming. For you do come to us at a great disadvantage, in this respect, that, your preliminary education, as a general rule, however sound it may be otherwise, has this great defect, that it is wanting in that elementary instruction in the Classical languages, which is absolutely requisite to a comprehension of even the nomenclature of Medicine, a science, replete, as it is, with terms derived from Latin and Greek.

Now, though no one could be more desirous than I am to see plain English used whenever it possibly may be, yet I am aware that to do so entirely would be impossible, as far as the language of

science is concerned. Nor would it be desirable, for we are often enabled, in one Greek or Latin word, to give expression to an idea that would require for its adequate representation a whole sentence of Anglo Saxon, and therefore I feel that it is a subject of regret that a certain amount of Classical study is not required in the Under-graduate who is to proceed in Medicine.

It is not only in this respect that you are at a disadvantage as compared with students in European Colleges, your previous mode of life, the society in which, as boys, you have mingled, the tone of thought, the example of all about you, have most probably been unfavorable to study, or to the application of your intellectual powers to subjects of the character now to be brought before you.

Sights and objects to the untutored mind, revolting and disgusting; matters to be committed to memory that are at first dull, uninteresting and incomprehensible, or, at the best, but half understood; the greatest difficulty of all, the inaptitude, at first, for application to study of any kind; inability to fix the attention on strange matters taught in a foreign language, and of which, beyond the most ordinary expressions, the very meaning of its words is obscure—withal, I might add the difficulties thrown in your way by caste, the objections and prejudices of friends, the troubles that you share with many of your fellow labourers in all countries;—the "*Res Angusta domi*"; the difficulty of meeting the expenses of a protracted professional education, and yet, taking all these into consideration, giving each its due weight, and looking at the result,—one cannot but say that, on the whole, it is satisfactory, and that European rational Medicine has taken and secured a firm hold among you.—It is calculated to prove one of the most potent of all Agents in harmonizing differences, in subduing prejudices, and in developing the mutual sympathies and kindly feelings of the races.

I can conceive no sight more gratifying to the philanthropist who looks forward to a more intimate fusion of the British and Indian races, than such an assembly, and for such a purpose, as that I am now addressing.

But to proceed with the matter I have undertaken, I commence at once with the Programme of your student life.

Since the inauguration of the Calcutta University, the right of giving Diplomas in Medicine and Surgery has ceased with this College. It is no longer an examining, though it remains, with you, the only Educational Medical Institution in Bengal. The old and somewhat vague title of Graduate of the Medical College, has given place to that of Licentiate, or Doctor of the University, and the qualifications accorded by these degrees are similar to those of British Universities.

The plan of your education is subject to the control of the Senate of the University, and in some degree it has been varied from that of the former system under the Medical College, when your Examinations were conducted by the College Professors, as such, aided, indeed supervised, by Government Assessors. This is no longer the case, your education being completed in the College, the examinations are conducted by the University, the successful candidates receive their Diplomas, in the form, and, possessing the prestige of, a University Degree.

The Degrees in Medicine granted by this University are those of M. D. and L. M. S. It is to the highest of these, the Doctorate, you, no doubt, will all aspire ; though the lower, the Licentiate, is sufficient to qualify you, legally, to practise your profession.

Let me give you some idea of what you have to do, to enable you to attain to these Academic honors, what they signify, and how they came to have such significance.

The present opportunity is, I think, a good one for making a few remarks on the subject of Universities and Degrees.

You have, no doubt, already made yourselves acquainted with the names of the subjects you are required to study, the number of years that must elapse before you can attain to the much coveted Diploma. But I will go over the Programme with you, and explain in detail as I proceed.

I observe then first, that Candidates for the degree of L. M. S. are required to have been engaged in study for five years at a School of

Medicine recognized by the University; that as a preliminary qualification they must have passed the Entrance Examination. This, as I before said, is an essential qualification and cannot be dispensed with, but might well be enhanced.

This period of five years, with its various subjects of study, is divided into two important sections. The first devoted to the elementary sciences on which Medicine is based; the second to their practical application in Medicine and Surgery themselves.

Now, not only does this division of the whole period of your study exist, but to each year its own special duties and subjects are assigned. Let us take them in the order prescribed, giving a brief outline of the nature and object of each:

The first year is devoted to the following subjects:—

Descriptive and Surgical Anatomy, General Anatomy and Physiology, Dissections, Chemistry, and Botany.

You commence with the very key-stone and alphabet of all your future knowledge. Anatomy, Physiology, and Chemistry, are truly the tripod on which scientific Medicine and Surgery rest. When you have, and not until you have, acquired a thorough and intimate acquaintance with these, can you hope to make any real progress.

In the study of Descriptive and Surgical Anatomy, you learn the structure of the human frame in all its organs, parts, relations, and arrangements, especially with reference to your future dealings with it in a Medical or Surgical point of view. It will be your duty to study it, not only in the Lecture Room, from the demonstrations and oral teachings of your Professor, but by assiduous labour in the Dissecting Room. You will be taught the various tissues and organs, their form, structure, mutual relations, and mechanical uses; you will see in them extraordinary adaptations to ends, marvellous design, the type of all that is perfect in Mechanism. Something, too, of the intimate structure and functions of each organ will be explained to you, as inseparable from a just definition of the parts themselves. You have, in short, to make yourselves fully, exactly, and practically acquainted with the human frame in all its details of structure.

This knowledge can only be attained by diligent combination of study in the Theatre and Dissecting Room. What has been explained and demonstrated by your Professor, you must realize for yourselves, Scalpel in hand, amid the blood and filth of the Dissecting Room. There is no other way of doing it. Anatomy as needed by the Surgeon, can be learned no where else. The most vivid descriptions, the most exact demonstrations of the best dissections, aided by the most accurate drawings, will be all but useless, for they will be forgotten, if not followed up, and impressed on your memory by direct observation and manipulation. This practical knowledge so acquired, you will find invaluable when you come to the performance of Surgical operations on the living body.

As in Descriptive and Surgical Anatomy you were engaged with the statical, so in General Anatomy and Physiology you learn the dynamical part of the study of organic structures. You will have to investigate more minutely and exactly the nature, composition, and functions of the tissues and organs, whose configuration and Anatomical relations have been described to you in the Theatre and Dissecting Room. It is now your business to study their uses and purposes, functions and relations to each other, and to the whole economy—how in the aggregate they constitute the individual, and in what respect each subserves the welfare of the other, and the whole.

You will learn whatever is known of vital action in its normal condition, or state of health; the doctrines of life as far as they are known, and the apparent distinction between organic and inorganic existences. The nature of those vital processes by which existence begins and is continued. The fundamental laws of vital forces and the doctrines of Morphology and development. Something also of the unity of the mental and corporeal states of existence; but here you approach matter of separate enquiry, passing from the regions of matter to those of mind.

The structure of the tissues and organs,—their histology, forms an important part of this branch of your study. Not only

their minute structure, in the investigation of which the microscope is indispensable, but also the chemical transformation of the ultimate textures, as in respiration and nutrition. You will be taught how the body is maintained in growth and development, how it is protected for a time against decay, how, when injured, it is capable of self repair, how the vital and physical forces are concerned in its creation, growth and decay, how it comes into existence, how it gives origin to other existences like itself, and finally, its own term being accomplished, it sinks into decay, yielding at last to the inexorable laws by which it is dissipated into its primitive elements, to pass into new phases of life, or remain locked in the stillness of inorganic death—

The study of Physiology is described in the prospectus of some Medical Schools, as the "Institutes of Medicine". You will see how aptly it is so designated, how close its relations to rational Medicine. The only true way of "arriving at a theory of disease, is by beginning with a theory of health." "The foundation of all sound pathology must be first taught in an observation, not of the abnormal but of the normal functions of life."

No less essential than the preceding, will be the study of Chemistry, which forms the third item in the Programme of your first year's study. Its purpose is to introduce you to the most important fundamental laws and properties of matter, the chief elementary substances, and the more important combinations into which they enter; to the laws that govern these combinations, and the various relations that groups of each have to one another. The subject of chemical affinity, combination in definite proportions, the atomic theory, chemical nomenclature and notation, the laws of light, heat, and electricity, will all be explained to you; and, further, having acquired a sufficient knowledge of Chemistry as applied to matter generally, and the inorganic kingdom of nature, you will become acquainted with combinations in a more complex form, and will be brought in contact with those laws which regulate the Chemistry of living bodies and are inseparably connected with the very springs of life itself. The importance

of this branch of knowledge is paramount ; without it, you are incapable of comprehending the nature of the vital processes upon which the very essence of existence depends. Your knowledge of Medicine, too, must be empirical in the extreme, if you are ignorant of the composition and modes of combination of the agents you employ in the treatment of disease.

*Botany* is the fourth subject of study of your first year, and though perhaps less directly important at first sight to the Medical student, yet it is one full of interest and importance too. Much of what you have learned in your physiological researches meets you here again. It is life in another shape that you have to study, and you will recognize laws of development, growth, and form similar to those you have already met with in the Animal Kingdom.

The study of Botany, to use the words of Dr. Balfour, involves "the consideration of the anatomical structure, external form, "function, classification, arrangement, and distribution of all "forms of vegetable life over the globe at the present and former "epochs, and the uses to which they are subservient, the examina- "tion of the plant in its earlier stages of development when it "appears a simple cell, and the pursuit of it through all its stages "of growth and development until it attains maturity ; a compre- "hensive view of all the plants which cover the earth, from the "minutest lichen or moss visible by aid of the microscope, to the "most gigantic production of the tropics. It marks the relation "which subsists between all members of the Vegetable World, and "traces the mode in which the most despised weeds contribute "to the growth of the mighty denizen of the forest. It is a "science which demands careful and minute investigation, re- "quires great power of observation and research, and is well "fitted to train the mental power to prompt and vigorous "action."

The study of Botany especially commends itself to the Medical Student, for a large proportion of the agents used in Medicine are vegetable productions ; and to you particularly so, with the

great advantage you enjoy in one of the finest Botanic Gardens in the world, and the privilege accorded to you of making free use of it.

This completes the work for the first year—a period I earnestly recommend you to devote seriously to study, not so much for the actual amount of knowledge that you may acquire, but that in it, you may impress yourselves with habits of work, you may get well into that way of working, and lay a foundation, of which you will subsequently reap the benefit. Idle away your first Session, and the chances are much in favor of your doing the same with those that follow. You acquire a distaste for the work you have never thoroughly taken to, and the first great difficulty is never surmounted; you have not only got to learn, remember, but you have got to learn how to learn. The first year is the time for it: let me advise you not to allow the chance to escape you.

During your second year, you have to repeat the subjects of the first, and in addition, you have to turn your attention to *Materia Medica* and Practical Pharmacy; your previously acquired knowledge will now be needed, for of these subjects, Botany and Chemistry are essential elements. You will have your attention directed to the Medicinal Agents, whether Vegetable, Animal, or Mineral, that are in use in the treatment of disease, and also the conditions under which they are required, their various modes of action and effects upon the human body, in health as well as in disease. Not only are you to learn the uses, properties, and other qualities of the articles composing the "Materia Medica," but you are required to make yourselves practically acquainted with them in the operations of Pharmacy, which signifies that you are to learn to compound and prepare the drugs with your own hands. This is a very important part of your practical education, and one that will always be of much use to you in after life. It is absolutely essential, indeed, that you should be acquainted with it; you will readily admit, I imagine, that you should know how to prepare the remedies you prescribe.

This subject of *Materia Medica*, with which is combined that of Therapeutics and Dietetics, is the first practical application of the scientific knowledge you have gained ; you have to do with the action of various agents in the living body. A complete knowledge of their classifications and also of the individual Agents in each group is as essentially necessary as is a perfect comprehension of their Physiological and Therapeutic actions.

With this must be combined a knowledge of the forms in which these *Medicines* may most fitly be prescribed, the substances with which they may be combined, or with which they are incompatible, the doses in which they may be given, and the cautions which peculiar circumstances render necessary.

The subject of diet is one, indeed, of immense importance, and which deserves and demands your best attention. It will, I know, be thoroughly expounded to you.

So much, then, for the second year of your studies. This is not complete, if every spare hour have not been devoted to Practical Anatomy, in the Dissecting Room. I cannot too strongly insist that you should fully avail yourself of the great opportunities you here enjoy. Make yourselves early well acquainted with this most essential part of your education, to leave your leisure for the many other important subjects that have yet to come.

In the third year, you have to repeat your attendance on the lectures on *Materia Medica*, you have still to prosecute your labours in the Dissecting Room; and now, it is to be hoped, that if you have been diligent, you are fast approaching to a tolerably complete acquaintance with the human frame. But you have new matter before you. Your knowledge of Anatomy, Physiology, and Chemistry have to be extended over a wider range. Comparative Anatomy, Zoology, and Practical Chemistry, have to be added to the list of your acquirements. The option is also given you of attending the lectures on Medicine and Surgery.

You have made yourselves acquainted with that of the human frame, you have now to study the structure of the Animal Kingdom

generally. You will, in your researches in human Anatomy, have realized something of the highest type of development, the nearest approach to the perfect idea. Much that was inexplicable then, will now be solved and many phenomena explained that otherwise must have remained unintelligible. Comparative Anatomy teaches you the structure of the Animal World generally, not merely of its individual members.

As Comparative Anatomy tells of the structure of the Animal Kingdom, so Zoology has to do with the arrangement and classification into groups, according to their affinities and structure. It indicates the place of each group or individual in the scale of animal existence, and it gives you an account of what is interesting in their natural history. You are allowed to attend the lectures on Medicine and Surgery in this year, but I think that your time will be so fully occupied with the subjects already named, that I cannot recommend you to attempt anything further at present. Give these your whole time and attention, and you will find that you are sufficiently employed.

Part of your duty in this year is of a practical nature ; you are directed to devote six months to the Medical and Surgical practice of the Hospital, during which time you are to receive clinical instruction, *i. e.* instruction at the bed side on the subject of disease. This is the most important, perhaps, of all your duties. You are now brought into actual contact with disease. It is not to be expected that at first you will make very much progress, but you will learn much that is useful in the treatment of the sick, and in the management and discipline of a Hospital. You will learn in the Medical Wards, how the examination and general treatment of a sick person is conducted, the Physical, Chemical, and other modes of detecting morbid symptoms and conditions. How food, wine, physic, are to be administered, and generally, in fact, how the sick are to be treated ; how cases are recorded and clinical instruction conveyed. If you observe intelligently, and make the most of your time and opportunities, you may, in this year, acquire a fair amount of practical knowledge.

In the Surgical Wards your instruction will be of an analogous character. You will learn the use of bandages, splints, and other mechanical agents; the various operations of dressing and attending to wounds, accidents, and Surgical diseases; the purpose of all Surgical Instruments and appliances. You will acquire the habit of observing, recognizing, and dealing with those emergencies and accidents which the Hospital Surgeon is daily called on to minister to; such as to arrest hœmorrhage, to dress wounds, to support and adjust fractured limbs, to reduce dislocations, and to make such applications as may be necessary. This practical method of studying Surgery is one of the greatest importance, and it is a privilege possessed to a greater extent by you in this School than in any other that I am acquainted with; for what here is part of the duty of every one, is accorded to the European student, after much labor as a reward, or on payment of a considerable sum of money.

But do not suppose that your duties in the Surgical Wards are to be merely of a mechanical, manipulative, or operative nature; you have to observe and study symptoms, just as you do in the Medical Wards, and you will quickly learn that Surgery and Medicine are but sub-divisions of one science, governed by the same principles.

With this year you complete the junior division of your curriculum, and you will be required to pass a University Examination, the successful issue of which, will be your warrant for entering on the senior department. You are now considered to have acquired the elementary knowledge requisite to enable you to proceed in the practical study of Medicine, and accordingly, you will be occupied with practical matters.

In the fourth year you are required to attend lectures on Medicine, Surgery, Midwifery, and Medical Jurisprudence, and again you are called on to prosecute your Anatomical researches in the Dissecting Room. You are to study regional Anatomy, and the performance of Surgical operations on the dead subject. This year also, is to be divided between the Surgical and Medical Wards, with clinical instruction in these subjects.

In the principles and practice of Medicine you will be taught the symptoms, causes, nature, and treatment of disease as it comes under the Physician's care, that department of Medicine whose province is internal disorder; and a very large and important section it is. You will have explained to you what you have already begun to observe in the Hospital; and you will be fitted to recognize, comprehend, and treat whatever you may there meet with. In Surgery you will be taught the same principles of Pathology applied to another division of disease, the external, occurring in different structures and organs, but yet not separated by any distinct line of definition. You have to do with the manipulative and operative part of Medicine, you have to bring your knowledge of regional Anatomy into action, and to exercise the skill you have acquired in the use of Instruments. But you will be taught that, however important the art of Surgery, the science is not less so; that you can never be a good Surgeon if you are ignorant of Medicine.

In Midwifery or Obstetric Medicine, you have to study the diseases and complications peculiar to the parturient female. You will see that a process, natural and simple in itself, may be attended with most serious complications, accidents and dangers, requiring all the presence of mind and skill you possess, to carry your patient through the time of peril. You will, moreover, be made acquainted with the diseases peculiar to the pregnant state, and to that which follows childbirth, and not of the mother only, but of her offspring. This, too, is a matter to be studied practically; and not until you have aided at the birth of several children, and had your tour of duty in the Midwifery Wards, will your studies in that branch be considered complete.

Medical Jurisprudence or Forensic Medicine, the last of the four new subjects of the fourth year, is also one of the highest importance. You here require all your previous knowledge to aid you in the solution of the questions to be brought before you, often of the deepest interest,—it may be, involving the lives or liberty of your fellow creatures. Upon your knowledge of analytical Chemistry, and

your anatomical and physiological experience, the life of a fellow creature may depend. It cannot be too strongly impressed on your minds, how very responsible your position in such a case would be, how earnestly you should endeavour to fit yourselves to acquit you of it faithfully.

In your fifth and last year of College life, you are again required to repeat the subjects of the previous year, and in addition you have to study Ophthalmic Medicine and Surgery, and Dental Surgery. You will also have the opportunity of learning them practically. To both of these very interesting subjects, I recommend your best attention; your opportunities are peculiarly favorable, for you have out-door Dispensaries with a large attendance of patients who seek relief for these diseases, and who are seen and prescribed for there by the Professors, who have thus such excellent means of affording you practical instruction. Dental Surgery is a recent addition, and not, I believe, a compulsory one; but it is so manifest a benefit to you, that I need hardly urge you to avail yourselves of the opportunity it offers of making yourselves acquainted, practically, with this most necessary, and hitherto neglected branch of Medical Science.

There are yet two subjects to which I must allude, though they have no special place in the College Curriculum, not that they are intentionally omitted, but that they have hardly come to be recognized as of sufficient interest to form subjects for special chairs. Their importance is becoming more and more acknowledged, and I trust the time is not far distant when they will not be left to be dealt with as part of other courses of lectures; but they will, I trust, as they ought, hold a prominent and special place in the education of every student of Medicine. The subjects I allude to are Hygiene, or public health, and General Pathology.

By Hygiene is implied all that "concerns the conditions upon which health depends, and by which it may be preserved and protected in its greatest purity and integrity. It therefore embraces whatever conduces to sustain as well as whatever tends to deteriorate or depress it, to shorten or prolong life, to reduce

or exhalt the general vigor and health of our race under any circumstances." It has to do with the atmosphere we breathe, the food we eat, the fluids we drink, the clothing we wear, the climate we live in, the houses we inhabit, the Hospitals of our sick, their ventilation, capacity, locality—the Barracks of our Troops—the various sources of disease or decay resulting from defects in any or all of these. In short, all that can directly, or indirectly, conduce to the support or deterioration of health, not only of the individual, but of the community. Much, on these matters, you will, doubtless, hear from teachers of other branches, such as Medicine, Surgery, Physiology; but it is impossible that so extensive and important a matter can be exhaustively treated in the partial notices it must of necessity thus receive.

Pathology is not less important. It is to Morbid Anatomy what Physiology is to Normal Anatomy. It is the Physiology and Anatomy of disease. It is, says Mr. Simon, "the science of life under other conditions than those of ideal perfection." I am aware that much of this, also, must be taught by your teachers of Medicine and Surgery; but it is a very extensive subject, and one that well merits a special chair. I trust, that ere long, a separate Department of Pathology may be founded in this and other Medical Schools, where not only will you be taught its principles in the Lecture Room, but its Anatomy, by demonstrations, in the *Post Mortem* Theatre.

Such then is a *résumé* of your occupation for the next five years—no easy task, I can assure you. It will require all your energies fully exerted to carry you through. So much to learn, so many branches of science to become proficient in! Each of them you will perhaps think sufficient in itself to occupy your whole time and attention. You will naturally feel more interested in some subjects than others. It is neither probable nor possible, that you should become equally accomplished in all. I assure you that this is not expected. It is not to be supposed that you are to be as perfect as your teacher may be in any particular branch; but you must have a thorough insight into each,

and with the majority you must be well acquainted. You must distinctly remember, too, the object for which you study them, that it is not merely for themselves, deeply interesting and important as they severally are, but in their relation to the Science of Medicine, *i. e.*, the knowing and treating disease on rational principles.

Remember, that when you approach the bed-side of the sick, it is neither as Chemist, Botanist, Physiologist, Anatomist, nor Specialist of any kind, but as Physicians or Surgeons who have studied the causes and phenomena of disease, its prevention and cure, by aid of the light that these various sciences can throw upon the subject. It is that you may be able to give a reason for what you do, and that you may be prepared to investigate and aid in the progress of Medicine; for without knowledge of this kind, though you may develope details within a narrow circle, you will never extend or enlarge the boundaries of Science.

Such are the objects of your study, and such what you have to do, before the University accept you as qualified for the important duties or fit for the honor of a Licentiate's Degree in Medicine.

Should you, having achieved this honor, desire subsequently to possess the higher grade of Doctor, you will, according to the present rules, have to submit to further examinations in the practical subjects already mentioned, and after a lapse of two years of creditable practice, if found qualified, the highest title that it is in the power of any University to bestow—that of Doctor, will be conferred on you.

And now, as I promised, let me say a few words on the subject of Universities and Degrees.

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## UNIVERSITIES.

The earliest traces that can be found of Universities are in Italy and France. Considerable obscurity attaches to their foundation, but those of Bologna, Salerno and Paris, are doubtless the first among these Institutions Whichever

may rightly claim priority, we must attach most interest to Salerno, as there appears to have been the first foundation of a Medical School, in the 7th century. Bologna, long famous as a School of Jurisprudence, pretends to trace its origin to the time of the Emperor Theodosius II., in the year 433.

Paris, no less famous as a School of Theology, refers its origin to Charles the Great as its founder, in the 8th century. But Antiquarians refuse to recognize in these two Institutions any State authority as Universities before the 12th century, as up to that date they were mere *Schola* or Schools ; such, indeed, would seem to have been the origin of Universities generally—an assemblage of pupils and teachers with self-framed Laws and Constitution. Such they were found with, and ultimately confirmed in, by order of the Sovereign.

Salerno, as an University, is traced to the 10th century ; a little later, the Schools of Bologna and Paris also received, by Royal edict, the status of Universities.

Thus, probably, the three may be assigned to about the same period of History, all possessing, sooner or later, Schools of Medicine. That of Salerno is to us most interesting, as being not only the first University School of Medicine in Europe, but the first where Medical Degrees were conferred. Before the 10th century, there are traces of a School of Medicine, also, in the neighbouring Monastery of Monte Casino ; and tradition points to the development of the Salernitan School by Constantine, a Carthagenian pilgrim who, returning from Asia, enriched with its Medical learning, and being in danger of his life from his own countrymen, as a Magician, fled to Italy, took refuge in the School of Salerno, and becoming a great master, attracted numerous Students from all parts of Europe and Asia ; for it is said that Greeks, Jews, Saracens, and Franks flocked there, and the fame of the Salernitan School rose so high that its doctrines became universally known and promulgated.

In 1140, a decree of Ruggiero, the King of Sicily and Naples who had himself studied Medicine at Salerno, ordained that its

own statutes should have the force of law. These statutes being those established by the Scholars and Teachers themselves, thus became law by Royal edict.

In the early period of its existence, Degrees had begun to be conferred. The teachers were called *Magistri* or Masters, the pupils Scholares. It would appear that the pupils who had completed their studies were called Magistri also; and subsequently, to distinguish the practitioners from those who remained in the School as teachers, the latter were designated "Magistri legentes."

In 1224, the Emperor Frederick II., having consolidated the Schools of Salerno and Naples into a new University, issued orders that no one should practice Medicine without testimonials of fitness from both the Magistri of the Schools, and the Government—a license to practise in fact, and permission to assume, with that right, the title of Magistri or Masters. All were prohibited from practising who were not so qualified. Here we have the origin of a Degree as a privileged title by mutual authority of the Government and University. It is to be remarked, that the early progress of the Universities of Bologna and Paris correspond with that of Salerno, and no doubt can exist that they exercised great influence on the Education, Civilization, and Liberties of Europe.

It appears that Frederick II. had much regard for the profession of Medicine, as he it was who caused the Works of Aristotle to be translated and used in the Schools with those of Hippocrates and Galen, which were also studied at Salerno. He forbid any one ignorant of Anatomy and Logic to practise Medicine. The educational course then comprising Medicine, five years, and Logic, three years. He also directed that the highest Degree in Medicine should be given only to those who had studied at Salerno. Other Universities, such as Montpelier, Vienna, Padua, soon rose into existence.

The privileges accorded by the Sovereign to the Universities, gave to the Professors a political importance, which served to consolidate these Institutions; on the other hand, these very privileges gave origin to a spirit of independence and license among students, which frequently caused serious disturbances.

The origin of many of the minor Universities is due to these dissentions; for example, in Paris, in the reign of Louis III., a dispute between the Magistrates and University Authorities resulted in the Professors and Students leaving Paris: not a few other cities in France profiting by this loss to the Capital. In the close of the 15th century, a similar dispersion occurred in the University of Leipzic, on the subject of a disease which had but recently become notorious, not only from its ravages among the Troops of Charles VIII. of France, and Ferdinand II. of Spain, during the siege of Naples, but throughout the entire population of the South of Europe. The disputes concerning the treatment of this malady ran so high, that Professors and Students deserted the University, and spreading abroad and settling in other cities, became the founders of other Universities, such as those of Wittenberg and Frankfort-on-the-Oder. Many of the more modern Universities were founded by Royal Charter confirmed by Papal Bull. This concurrence of the Church the Popes were not slow to establish, recognizing the influence such important bodies must have on the progress of civilization. A certain reciprocity of rights arose out of this Papal concurrence which extended over the Universities of all Christendom, and by which the Students and Graduates of all Universities were admitted to each other on easy terms. Traces of this still remain; a British Graduate, for example, on presenting his Diploma, is admitted freely to the University Lectures in Paris.

But time would fail me to trace the history of all the European Universities. Of the three primary ones, Bologna and Paris still remain. Salerno has become a tradition.

Let us glance at the British Universities. These, like those of Germany and Holland, are modelled after that of Paris, whilst those of Spain and Italy are after Bologna. The English Universities are Oxford, Cambridge, Durham, and London; the Irish are Dublin, the Queen's University, and the Catholic University. In Scotland, Glasgow, St. Andrew's, Aberdeen, Edinburgh. These, with the exception of London, Durham, and the Catholic

and Queen's Universities in Ireland, are of ancient or mediæval dates, taking their rise with, and like those, on the Continent.

In England, Oxford, and Cambridge, (the Universities *par excellence*), date their foundations from the 13th century, Oxford having been recognized as a University as early as 1201, by King John ; Cambridge, by Henry III., in 1231 ; though in each case, as with the three older Continental Universities, they had long before existed as Schools, Oxford dating from 886, Cambridge from 1110. Like their Continental types, they arose in the midst of ignorance, a few learned men collecting around them—those zealous for the acquisition of knowledge, and so acquired consuetudinary rights and privileges, which the Monarchs who gave them their charters as Universities were glad to adopt and consolidate.

In Scotland, the oldest University is that of St. Andrew's, which was founded in 1411 or 1413 by a Bishop, and confirmed by a Bull from Pope Benedict XIII., its privileges being ratified by King James I. in 1423.

Glasgow was founded by King James II. in 1450, and confirmed by Pope Nicholas V. Aberdeen was founded in 1494 by a Bull from Pope Alexander VI. on the request of James IV. Edinburgh, the junior of the Scottish Universities, was founded by King James VI. in 1582 : he gave it his name and promised to endow it. The name—the College of the Edinburgh University still retains, as the College of King James VI. The endowment was however forgotten. With this University the Pope had nothing to do ; its foundation is due only to the King.

The University of Dublin was founded in the year 1593, and it is modelled, I believe, on that of Oxford. Queen's College, Ireland, was founded in 1850. The Catholic University is also of quite recent date.

The Universities of *Durham* and *London* are also of modern date. The former was founded in 1837, the latter in 1836, and it is that which most interests us here, as it is the model on which the Indian Universities are founded. The great difference

between it and others being that it is purely an examining body. That although it lays down a plan of education in each Faculty, it does not itself profess to teach. In lieu of teaching, it selects, and, as in the case of the Indian Universities, affiliates such Schools and Colleges as it deems capable of affording the necessary instructions, and thus, after supervising their education, accepts Candidates and confers Degrees on them, when found duly qualified. In this respect, these Universities, London and Indian, differ widely from others, which require that the education of the Candidate for a Degree shall have been conducted, if not within their own walls, at least within those of some other University. Now *here* as in London, the only condition is, that the training obtained in such affiliated School shall have been good, and the knowledge sound. It seeks not to insist on the locality in which the student shall have received his education.—Its Schools and Colleges extend from the Punjab to Ceylon. Its functions are simply those of an examining body, controlling and directing the plan of education.

You will, I trust, have gathered from what I have said, something of what is meant by a University ; that it is a Corporation consisting of a Chancellor or Head, a Vice-Chancellor who is the Executive Head, with Senate and Syndicate or executive body of the Senate, and its Fellows or Members, who are divided into Faculties. These are Theology, Law, Medicine, Music, Science, Arts, and in the Indian Universities, Civil Engineering.

The British Universities have generally only had the Faculties of Divinity, Law, and Physic. Music has comparatively, lately, been elevated to the dignity of a Faculty, and, but very recently, the University of London has determined to give Degrees in Science, having also, I conclude, instituted a corresponding Faculty.

Civil Engineering is the last created Faculty, it having been made so in this University, which dates its foundation, like its Sisters of Madras and Bombay, in 1857.—Divinity, Law, Physic, in that order of precedence, I may add, are described as the superior Faculties.

So much then for the Universities, their position as Educational Institutions and their right of conferring Degrees.

The next question is, what is meant by a Degree? and what are the advantages, honors, and privileges it confers? These, like the laws and privileges of the Universities themselves, originally consuetudinary, have become legal rights.

As I mentioned to you with reference to the earliest Universities, the Emperor Frederick found that the *custom* was to give the title of *Magister* to a qualified Physician. He ordered that it should be done so by law, and since that time such has been the nature of the University Degree.

As there are various grades or steps in the progress of learning, so there should be various distinctions in the dignity of those who have studied; and the grades and Degrees have consequently been various. In some Universities, as many as four,—Bachelor, Licentiate, Master, Doctor; and these titles are still retained, the Bachelor being the lowest, the Doctor the highest, in any Faculty in which it is conferred.

I have already told you how Graduates came to be called Magister (Master), let me now tell you something about the Doctors, Bachelors, and Licentiates.

Degrees were first regularly methodized at Bologna and Paris. The first Degree was that of Bachelor,* next the Licentiate, third the Master, fourth and highest the Doctor. But it was not essential that every Candidate should pass through all the lower, before he could reach the higher, he might, if qualified, attain the highest at once, "per saltum."

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* As to the Etymology of Bachelor. The Baccalaureate or Bachelor's Degree, said to have been derived from the Knight Bachelor (Bas Chevalier), which was the lowest Degree of Knighthood. The term was applied to the lowest Degree in learning, and was probably first in use in France.

Baccalaurei are also said to have been so called from Baculum, a Baton (a stick), given to students as a mark of their having attained a certain Degree in learning.

It is supposed that Degrees had their primary root in the three honors successively conferred on the Students of the Academy of Athens. But Degrees, as now known, were first devised by Gratiano, a famous Law Professor of Bologna, in the 12th century, or by Pope Eugene, with Gratiano's aid, in the year 1150 ; and it is said that they were transferred to Paris in 1152, by Peter Lombard. At that time, however, the title Magister and Doctor were not new. 80 years later, the Bachelor, Licentiate, and Magister, are alluded to in a Bull of Gregory IX., addressed in 1231 to the Magistri and Scholares of Paris, but they are alluded to as existing Degrees, and not as new inventions.

There were thus four titles, but only three real steps in graduation ; first, the Bachelor ; next the Licentiate, (not only as a License to practise in Theology, Law, or Medicine, but actually as a step in graduation) ; third, the Magister ; and fourth, the Doctor, which were then almost synonymous. When Magister ceased to denote a Teacher only, and was applied to simple Graduates, the Professors became Doctores or Teachers ; but subsequently, as in the instance of Masters, many Doctors did not teach, although graduated to do so, the title, as that of a simple, though the highest, graduate remained.

In Paris, the Professors were then called, for the sake of distinction, "Doctores Regentes," as formerly the Magistri who taught were called "*Magistri legentes.*" The title of Magister and Regent were long preserved in the Scottish Universities. Magister is still the highest Degree in Arts. The Doctorate in that Faculty has never been given, except in the German Universities, where it is given, as "Doctor Philosophiæ," not Artium. In Medicine, at the present day, the Degrees usually given are those of Bachelor and Doctor, and in one or two Universities there is also the Licentiate ; but it has not the same significance exactly, as the License of the older Universities, being rather a License to practise given to Bachelors or others, in some cases to men who have not graduated at all, (and not as a separate Degree.)—It is only of quite recent date, in fact within the last two or three

years that in the Scottish Universities, the minor Degree of Bachelor of Medicine has been made use of, and now it is given previous to the Doctorate, as in the English Universities, where the Degree of Doctor is not conferred until some time after the Bachelor's Degree has been attained.

Here, in this University, the Licentiate has been made to substitute the M.B. ; but it is now under consideration, whether it may not be desirable to adopt the Degree in use elsewhere. The title of Magister is again brought into use as a Medical Degree in our Universities, and students can now graduate as Masters in Surgery, after becoming Bachelors of Medicine. As the Faculty of Medicine includes Surgery, as all other departments of Medicine, it is hard to see where the necessity of this new or resuscitated Degree existed ; as there can be no doubt that by ancient right, the Graduate of Medicine was fully entitled to practise every branch of his profession. It appears to have arisen out of the jealousy of the Surgical Corporations, which had rendered a separate and special qualification in Surgery necessary for many public Medical appointments.*

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* In Germany, early in the 16th century, the position of University Doctors of Divinity, Law, or Physic, was as follows:—

"The Diplomas of all three conferred certain privileges. If circumstances ever brought the holders of these Diplomas before a Judge, they might remain seated whilst sentence was being pronounced. Their wives were authorized to dress as noble ladies did. The old German Doctor might wear a sword, a confession of Nobility, though not nobly born, which was never made in France or Italy. He was, moreover, exempt from certain taxes ; he was never subjected to pay tribute of customs, or duty of excise. He was also free from arrest ; nor could he be summoned against his will, as a witness ; but when he chose to make a deposition, his oath, or his word, were held to be twice as potential as that of an ordinary man."—*Meryon's Hist., Medicine.*

Such was the position and status of the Doctor Graduate in the 16th century in Germany. In England, at the present day, it is also high, being the greatest honor a University can bestow, and carrying with it high social distinction. Its position in India remains yet undetermined, but we may hope that the evidences of learning will receive no less favourable a recognition here than they do in Europe.

But this sketch of the history and nature of Universities as Medical Schools would be very incomplete, were I not to say something of the other Medical Corporations which have exercised so powerful an influence on Medical Education in the United Kingdom, and through which, differing from most other countries, it has been brought to pass, that a large proportion of Medical men are not Members of any University at all.

The Medical Corporations to which I refer, are the Colleges of Physicians and Surgeons, and the Apothecaries' Societies, all giving Diplomas or Licenses quite independent of the Universities, though gladly conferring them on Graduates who may desire to conform to their regulations.

With reference to the College of Physicians, it is to be remarked that it has, as a general rule, admitted, especially to the higher grade of Fellowship, only Graduates.

Until the passing of the Medical Act of 1859, each Corporation had its own peculiar privileges, and each section of the United Kingdom had its exclusive rights as to Medical practice. The Universities though granting the highest titles, were regarded rather as conferring Academic distinction than professional right; and in many public Offices it was requisite that the candidate should not only be a Graduate, but that he should also be licensed by one or other of the Corporations.

This is no longer absolutely the case. The professional rights and privileges of all who have been duly registered as qualified, except India, where the Medical Act has not yet been made operative, are recognized throughout the whole of Her Majesty's dominions.

The old distinctions between Physician, Surgeon, and Apothecary will yet, no doubt, be maintained to a certain extent, but they will depend more on individual qualification and attainments than professional title.

Degrees in Academic rank will also, no doubt, maintain *their* position, but it is to be hoped that the dissensions and troubles that have agitated, divided, and obstructed the progress of our profession, and in some degree degraded it to the position of a

trade, will cease, and that the general tendency will be towards progress, and the promotion of a higher standard of Medical ability, as well as of professional ethics.

Here in India, the sole qualification is the University Degree; you obtain with it the right to practise any branch of your profession, you attain also a recognized position in the scientific world, and a status of high respectability in a social point of view. Let me urge you to do your best as students, worthily to attain to this Academic rank, and having attained, to maintain it in all its integrity, and do honor to the position in the social scale in which it places you.

Time does not permit that I should detain you longer, and I will conclude what I have to say in a few words.

Let me again urge you to consider the importance of what you have undertaken. Approach it with a firm determination to overcome all difficulties, and whilst ever keeping your eye steadily on the end, endeavour thoroughly to grasp and master each subject successively in detail; you will thus, with perseverance and industry accomplish much, and acquire a sure and accurate knowledge of the elements of your profession. Take advantage of the great opportunities you enjoy in this School of obtaining practical knowledge of your work. Labour hard whilst you are young, that you may implant in your natures habits of work, and acquire, in so doing, a stock of facts and information, the value of which, though at the time you may not entirely appreciate, yet will always serve you in after life, when your matured intellect and experience may have taught you how to generalize and apply them in practice. Above all, do not put off working until the last: you may cram yourselves for an examination by so doing, but your knowledge will be worthless, for it will have no hold, and will desert you—good fortune if it do not fail you, when in your examinations you are submitted to the final test.

Let me entreat of you to view the responsibilities of your position, even as students in Hospital, in a proper light. In your daily routine of duty in the Wards, you will have it constantly

in your power to prove how thoroughly you appreciate and act up to the great object of the calling you have chosen—to relieve suffering, even if you cannot cure disease. Do not look upon the patients as mere objects of scientific or professional interest, but prove to them that sympathy, kindness, and mindfulness of their wants are quite compatible with, and even prior to, the scientific interest with which you regard them as patients, and that in both lights you study their welfare and watch them with the greatest care.

Let me advise you to be very punctual, careful, and diligent in your attendance in the Lecture Room and in your Hospital duties. Try and be so, not because you have a roll-call to respond to, and the penalty of a forfeit certificate to pay, if you are absent beyond a certain number of times, but because you like your work, you take an interest in your studies, and you see the necessity of order, punctuality, and regularity in this, as in all other concerns of life.

Be as inquisitive and persevering in your investigations as you can, remember that you come to learn, and that we are here to teach. You are not expected to know at first, and you need never be ashamed of asking for information when you are ignorant. Do not, therefore, be deterred either by bashfulness, vanity, or false modesty, from seeking information in each other's presence, from fear of shewing ignorance in your laudable efforts to gain knowledge.

We have all much to learn, *our* profession is one, indeed, in which we must, if we wish to be doing good, ever be diligent and humble students.

Do much with your own hands. There is no disgrace in performing many offices for the sick, with skilled hands guided by scientific heads, which in other situations of life you would naturally turn from as degrading and menial in their nature. All that you will be asked or required to do as Dressers or Clinical Clerks, much as some of it may at first astonish you, has been done by the great men whose names you revere, whose books you study, and of whose fame you are proud, as I trust some of

you will be able to emulate. Rest assured, that they never would have been what they were, or are, had they shrunk from such duties and operations, as it must fall to the lot of every Dresser and Clinical Clerk to perform, and which students in European Hospitals are eager to compete for, and pay for the privilege of doing.

Now I make these observations to you in a friendly spirit, and not as finding fault, but because I think I have seen occasional shrinking from duties which were from a mistaken sense of dignity or self respect, I suppose, deemed to be derogatory. Let me assure you that such a view is a mistaken one, that true dignity lies in doing your duty without reference to the personal inconvenience it may temporarily cause you, and without shrinking from anything however disagreeable, at a first glance it may appear, by which you can gain knowledge and contribute to the welfare of the sick. Rest assured also that you will never be called on to do anything that your Teachers themselves have not done.

The very nature of your avocations, your constant familiarity with disease, suffering, decay, and death in all its forms and stages, though they may render you apparently less susceptible to the deeper emotions and more solemn reflections with which such experiences would affect casual observers, yet cannot fail to impress you with a true sympathy and appreciation of the sufferings to which human nature is liable, showing to you at the same time how transient and uncertain all mere worldly considerations are, and ever must be. Nor can they fail, whilst exciting your sympathies and calling forth all your better feelings, to impress you deeply with a sense of the magnitude of your own responsibility, and of the solemn nature of the obligations imposed. The moral lessons to be derived from such reflections, it may not perhaps be considered within my province to dilate on here, but still I would not pass them by in silence, nor fail to urge you whilst pondering them deeply, to lay to heart the important truths they teach. Remember, that whilst justly you may feel pride in the power your knowledge confers, that you must exercise it with humility, bearing in mind how fallible after all the best may prove, and

that you are, even when most successful, but the humble instruments of a higher power in whose hands you are, and on whose guidance your dependence must rest.*

In conclusion, let me in the words of Dr. J. Brown, remind you—"That to a thinking man the profession of Medicine must ever be a serious thing, to feel that the lives of his fellow mortals are in his charge, and that he has to stand as it were between them and Death, Eternity, and the Judgment Seat, and to fight hand to hand with Death;" or as that great Physician and good man, Dr. Sydenham, in reference to this, says,—"What it would be well that all Doctors, young and old, would consider, it becomes every man who proposes to give himself to the care of others, seriously to consider the following things :—

"That he must one day give an account to the Superior Judge of all the lives intrusted to his care.

"That all his skill, knowledge, and energy, as they have been given him by God, so they should be exercised for His glory and the good of mankind, and not for mere gain and ambition.

"That the Doctor being himself a mortal man, should be diligent and tender in relieving his suffering patients, inasmuch as he himself may one day be a like sufferer."

I will detain you no longer than to say that we welcome you cordially to the College, that we are prepared to do all in our power to guide and instruct you rightly in the work before you, and that we hope you will in the same spirit as seriously endeavour to assist us in promoting the common object,—the welfare of the sick, the instruction of the student, and the advancement of our Profession.

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* Author of *Horæ Subsecivæ.*

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