

AN
INTRODUCTORY LECTURE

ADDRESSED TO THE

STUDENTS OF THE CALCUTTA MEDICAL COLLEGE,

On the 15th June 1859,

BY

CHARLES ARCHER, M. D.,

SURGEON, BENGAL ARMY,

Professor of Ophthalmic Medicine and Surgery in the Medical College.

Printed by order of the Director General of Public Instruction.

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INTRODUCTORY LECTURE.

GENTLEMEN,

THE Professors of this College are required in rotation to inaugurate the opening of each session with a general Introductory Lecture, and upon the present occasion it has fallen to my lot to address you. Had the election of refusal or consent been allowed, I should have hesitated before undertaking the task, for independently of the great diffidence all must feel in such a position, I am conscious of manifold defects, which unfit me for so onerous a duty. The custom, however, is to a certain extent good, for not only does it remove any charge of presumption, to which the lecturer might otherwise be liable, but it likewise marks an epoch in the student's life, to which he will subsequently look back with pleasure or regret in proportion as his time has been spent profitably or the reverse. I have endeavoured with much earnestness to shield myself from the imputation of want of zeal in your behalf.

Each Professor, on whom this duty has devolved, has chosen some particular subject on which to address you, and many themes of great interest to the Medical Student have been most ably illustrated. I have, however, after much deliberation, decided on not following precisely these

precedents, chiefly from my anxiety to avoid ground that has already been so worthily occupied, and partly from a conviction that a scientific subject can be but cursorily considered in a single lecture. I have preferred rather to take the present opportunity, (than which a more favorable one cannot occur) of endeavouring to describe that intellectual and ethical standard, all young men should strive to attain who desire to devote themselves to one of the noblest professions man can cultivate; would that I had the power as I have the will to tell you in words at all adequate to the subject, how noble and benevolent are the principles which should animate the mind of him, who is desirous of consecrating his mental energies to the pursuit of the science of medicine, energies which ought to be guided by the highest standard of morality, by a spirit of self-abnegation, and by the bright hope, that, in thus elevating himself in the scale of humanity, he may not only have the comfort of an approving conscience but a reward far higher than any this world can bestow.

There is no profession which exacts more mental labor than the one you have chosen. In no other position of life are you so called upon to keep in the van of modern discovery. Society as well as your profession demands of you, a knowledge not only of all that relates to your own immediate duties, but of subjects connected with the whole range of natural science; there must be no limit to your education, no bounds to your industry. Nor are these requirements altogether without foundation, when we consider how much modern discovery has tended to the elucidation of the hidden laws of disease; hardly an onward step can be taken in the march of Science that does not either directly or indirectly assist the members of our profession in their

The Natural history of parasitical beings both animal and vegetable will serve as an example of my meaning, at first sight how little does this subject appear in any way connected with the study of medicine, the reverse however, is the case, and the habits and modes of propagation of animal parasites is full of absorbing interest to the medical student, when it is remembered that the human body is constantly the prey of such forms of existence.* Much research and discussion has taken place as to their propagation more especially with reference to man; up to the present day there has been little doubt, but that the germ of each animal has been conveyed in some manner through the various out-lets into the interior of the body, or through open wounds. Owen and Von Siebold's researches have demonstrated that it is not absolutely necessary that each germ should be so conveyed, as in certain forms of animal life, one individual is in itself capable of self re-production, for many generations; and M. Pouchet, at a meeting of the

* *Internal Animal Parasites.*

Brain.—Acephalocystis multifida or Hydatids.

Eye.—Filaria oculi—Cysticercus cellulosa.

Liver.—Acephalocystis endogena, or pill box Hydatid—Echinococcus hominis.

Gall Bladder.—Distoma Hepaticum, or liver fluke.

Spleen and Omentum.—Echinococcus hominis.

Kidney.—Strongylus gigas.

Ovary.—Polystoma pingucicola.

Urinary Bladder.—Diplosoma crenata.

Small Intestines.—Ascaris Lumbricoides or round worm—Tœnia Solium, or common tape worm—Bothriocephalus latus or broad tape worm.

Large Intestines.—Tricocephalus dispar, or long thread worm—Ascaris vermicularis or common thread worm.

Arcolar Tissue.—Filaria medinensis or guinea worm.

Muscular Tissue.—Trichina spiralis—Cysticercus cellulosa.

Bronchial Glands.—Filaria Bronchialis.

External Animal Parasites.

Skin.—Pulex penetrans, or chigoe—Acarus scabiei.

Hair Follicles.—Acarus folliculorum.

Surface of the Body.—Pediculus corporis.

Hair of the Head.—Pediculus capitis.

Hair of the Pubis.—Pediculus pubis.

Eye Lashes.—Pediculus ciliarum.

Clinical Medicine by T. H. TANNER, M D, LONDON, 1855.

French Academy of Sciences, has gone so far in connection with this subject, as to re-produce in a new form the old exploded notion of spontaneous generation, and to which I shall subsequently allude more in detail.

When however, the doctrine of reproduction of the lower animals is considered, there is so much that is wonderful and beyond the reach of human comprehension, that it almost exceeds belief. I may as an illustration, mention that Reaumer, as quoted by Kirby and Spence in their introduction to Entomology, has proved that “in five generations one aphid may be the progenitor of 5,904,900,000 descendants, and it is supposed that in one year there may be twenty generations.” Doctor Allen Thompson* says that “in a Hippoglossus of 156lbs in weight he found 3,500,000 ova. The queen Ant of the African termites is said to lay 80,000 eggs in 24 hours, and the common hair worm or Gordius as many as 8,000,000 in less than a day.”

The human body is moreover, constantly the abiding place of vegetable parasites. In the disease called pityriasis we have an example of a small cryptogamic plant, the *Microsporum furfurans* and this example could be greatly multiplied. An intelligent French Savan, M. Robin†, has recently written

* Article Ovum in the Cyclopædia of Anatomy and Physiology, London 1859.

† *Vegetable parasites found chiefly in the external parts of the human body.*

Trichophyton tonsurans (roots of the hair.)

Trichophyton sporuloides.

Trichophyton ulcerum (ulcers.)

Microsporon Audouini (porrigo decalvans.)

Microsporon mentagrophytes.

Microsporon furfur (skin, chloasma.)

Mucor mucedo.

Achorion Schoenleinii (porrigo favosa.)

Aspergilli species (External auditory canal.)

Penicillium favi

a book of 700 pages octavo, concerning only the vegetable parasites found in man and animals. No living animal seems free from the attacks of such growths; and at a recent meeting of the British Association for the advancement of science, there is related the death of the common Hive Bee, occasioned by a parasitical fungus; in the case alluded to, a whole colony was destroyed by the attacks of this vegetable growth.* Diseases of the human body have recently received in several instances a new pathological interpretation from the careful study of this form of vegetable life, whether however, morbid secretions form only a matrix for the development of these vegetable organisms, or whether the latter are causes of the former, is at present a matter of speculation; it is certain however, that in Diphtheria, the presence of the vegetable fungus the *Oidium albicans* is common if it be not always present, and in a case of Asthenic Bronchitis†, as related by Dr. Laycock, “the
“*volox globatur*, was found in apparent abundance in the
“fur of the patient’s tongue.”

But if the natural history of plants and animals is of such valuable aid to the student of medicine, the science of physics has been equally lavish of her gifts, it is within the bounds of truthful affirmation to say that the achromatic

Vegetable parasites found chiefly in the internal parts of the human body.

Cryptococcus cerevisia (Intestines.)

Merismopœdia ventriculi (stomach, lungs, brain.)

Leptothrix buccalis (mouth.)

Oscillaria intestina.

Leptomitum Hannoverii (pharynx and œsophagus.)

Leptomitum epidermii.

Leptomitum uteri (uterus)

Leptomitum uteri mucosi (uterus.)

Leptomitum oculi (eye.)

Oidium albicans (mouth and throat.)

Histoire Naturelle des Végétaux parasites qui croissent sur l’homme et sur les animaux vivants par Charles Robin Docteur en Médecine, Paris 1853.

* Quarterly Journal of Microscopical Science, London, 1859.

microscope has in a few instances induced such a revolution in anatomy, physiology, and the treatment of disease, as almost to remove the old landmarks of the profession in such cases. The histological researches of the day are models of patient labor and thought, and have repayed the anxious inquirer with marvellous revelations, proving without doubt that the anatomy of the monad is comparatively as perfect as that of the elephant, and that the manifold associations of elementary matter, in which the various forms of life are developed, are governed by the same laws—are bound up in the same grand unity. If “the Heavens declare the glory of God” the humble and patient student with his microscope has additional cause for glory, when he can in a drop of water discover 500,000,000 animated beings, each distinct, each having a separate existence, polygastric, and doubtless if analogical reasoning may be recognized in its entirety, each pursuing other animals for prey, too minute for the Microscope to discover, or the human mind to conceive, but which appears a necessary sequence in the laws of animal organization; with man’s finite senses physical demonstration must be limited; and when we find Ehrenberg describing the cilia on an animal the 24,000th part of an inch in diameter, we have reason to believe that these boundaries have been nearly reached, leaving to the chain of mental deductions and analogical reasoning, the duty of supplying the imperfection or want of further development of man’s senses.

As an illustration of the manner in which anatomy has profited by such aid, I may mention that structures which were before totally unknown are now demonstrated with ease by the youngest students in the profession, the retina which but a few years ago was considered but a simple expansion of the optic nerve, is now found to consist of seven

distinct layers, each different in essentials from its neighbour and each doubtless having a different function to perform, one layer in birds and in the turtle is described by Nunneley* as consisting of conoidal or fusiform rods, surmounted with transparent colored globules; do not think lightly of these discoveries, they must not be looked upon with the cold eye of utility, they must not be gauged by the question "of what is the use of this knowledge in the treatment of disease"? Every truth, however apparently insignificant now, may probably hereafter make clear what is at present obscure. Neither will time nor the occasion now admit of speculation; if it did, I could show you from this barren soil of utility how easy it would be to found a theory thereon, and show you how some of the hidden diseases of the eye might be made practically demonstrable from this knowledge, when assisted by the development or extended use of the ophthalmoscope.

But it is in the regions of pathology and animal chemistry that the microscope has been of such value; as a means of diagnosis in disease it is but of recent date, but its utility, nay its absolute necessity in many cases, has been so universally acknowledged, that at the present day it is as necessary an adjunct to the professional man's table as the stethoscope, and bears the same relation to the diseases of the kidneys as the stethoscope does to the diseases of the lungs, making what was before vague speculation, a matter of physical demonstration, and bringing certain forms of empiricism within the pale of philosophical treatment, the presence of a certain class of diseases being almost dependent on its aid for diagnosis.

The revelations in disease by the aid of animal chemistry, by the microscope, and by the stethoscope however valuable in diagnosis, must be looked upon only as a

means of ascertaining certain isolated facts. I mention this to protect myself after what has been already said, from the imputation of wishing to convey to your minds, that one or other of these aids to diagnosis is sufficient for you to form a correct judgment, to the exclusion of the more general and collected symptoms under which a patient may at the time be laboring; this is far from my meaning, the discovery of one fact only, must be always subservient to the collected symptoms, otherwise a fatal error is possible; for instance, it is not sufficient to say that because animal chemistry enables the physician to discover albumen in the urine, that therefore the patient must be suffering from a rupture or dilatation of the capillaries in the Malpighian bodies, or that because the stethoscope can diagnose disease of the valves of the heart, which may be co-existent with anasarca, that the latter is necessarily dependent on the former; the inference in each case, without further enquiry, is that probably they are so dependent, yet it is possible that there may be other interpretations, which subsequent enquiries may discover; moreover, the microscope may enable the observer to discover blood globules in the urine, this may be a fact of the gravest significance, or the reverse, as additional investigations may determine; I have thought this amplification of my meaning necessary, lest I might have given too great a significance to these aids, whereas I only wished to illustrate the mode by which collateral science assists the enquirer in the investigation of disease; moreover, if not looked upon in the light of this explanation, great discredit is apt to be thrown on their assistance, which is contrary to the experience of their judicious application and use.

From the few illustrations which have been given, it will be evident that the profession of medicine embraces for

years devoted by you as students to the acquisition of its fundamental knowledge, however diligently spent, will but enable you at the end of your College career, to enter upon its intellectual and reflective study; you must not be satisfied with gaining sufficient knowledge to pass the necessary examination to qualify you to hold diplomas, and conclude that all further study is unnecessary. The education you receive in any School of Medicine will but enable you to advance in the career of improvement unassisted; the period of study must extend throughout your lifetime; as long as your mental powers are spared to you, their vigorous and conscientious employment will daily convince you more and more of your ignorance, and that like a traveller ascending a high mountain, each step taken will certainly increase your range of vision, but it will at the same time open out vaster fields of untrodden ground—of unexplored country, the higher the ascent the more boundless will the prospect become, the more illimitable the objects of research.

This reflection is of advantage lest you might be disposed to think that the ground occupied by modern discoveries is so extended and comprehensive, that further research is closed to you; that in fact there are no fresh openings for individual labor; no new fields for the development of aspiring genius. Such an idea cannot, in a reflective mind, outlive the experience of a day, for continually some new doctrine, startling in its boldness or novelty, forces itself on the attention, attacking those theories of life, organization, or disease, which philosophers have endeavoured to build on the recognized laws of science, and the whole range of animal economy which you may have imagined to have been thoroughly explored, is shewn to be capable of new interpretation, day after day the conclusions of centuries are abruptly torn from their position, and a new world is revealed.

sophy, proving how difficult it is for the finite mind to grasp and fathom the depth of those laws by which the Infinite has been pleased to regulate the universe. Such discoveries, moreover, shew the absurdity of dogmatic assertions, and the necessity for caution and humility in every conclusion we may form. The smallest advance beyond what is already known requires a combination of qualities granted to but few of our race; intellectual elevation—the power of mental abstraction—perseverance—patient toil—properly educated senses; so much indeed is still unknown in the region of pathology and physiology, that in the investigation of any matter which does not admit of physical demonstration, we are only too glad to avail ourselves of the collateral aid of the entire range of natural science.

I have used the words “educated senses” with deliberation, as it is almost impossible to conceive the extent of perfection to which the senses can be brought, by judicious care and exercise, and their proper use in the diagnosis of disease is of the first importance. It is not affirming too much to say, that in certain cases the nature of a patient’s illness may be guessed at by the peculiar physiognomy alone; the hectic flush of consumption—the pale and jaundiced appearance caused by disease of the liver—the bent brows and groping gait of cataract—the wild staring look of amaurosis—the terrible and peculiar impress of death too plainly shown in the expression and complexion of the victim to malignant disease are at once recognised by the experienced physician. Moreover, how can we sufficiently estimate the sense of touch when properly cultivated, the throbbing of an aneurismal tumour—the presence of deep seated matter—of fluid in the cavities of the body. Indeed the extreme perfection and

by the blind being able to distinguish color by its aid ; there is, I believe, a physical explanation of this singular phenomenon ; but as I said before, this is not the place for speculation, the fact itself is sufficient for my purpose. But if sight and touch are of such importance in diagnosis, equally so must be the sense of hearing when it is remembered that by the variations of sound we can discover the abnormal state of the lungs, and give a local and definite interpretation to the previously hidden pathology of the heart. I will not multiply instances ; enough has been said to convince you that the expression "educated senses" was not wanting in significance.

Before concluding this division of my subject, I will show you by examples in what manner discovery is opening out new fields for research, and I will instance a few of the most modern and diverse in the hope of arresting your attention and stimulating your ambitious enquiry ; I have deemed it right to do so in amplification of the many allusions I have made to the subject.

The re-production of bone is a matter of great interest to the physiologist and surgeon as it has direct reference to the treatment of fractures. The subject has been recently brought before the French Chamber of Sciences, and although the experiments were conducted on the lower animals, still the results were so striking as to demand our serious attention. These experiments consisted in detaching a portion of periosteum from the tibia of a rabbit leaving some part intact, in connection with the bone, so as to allow the circulation to be carried on in the same way as the transplantation of skin is effected in plastic operations, the separated periosteum was then wound round the fleshy part of the leg and bone was deposited in whatever direction the current of blood was directed.

subsequently the connections of the periosteum with the original bone were destroyed without interfering with its vitality. In another experiment the periosteum was at once stripped off the tibia and placed on the muscles below the scapula, a deposit of bone taking place as in the former case.

The subject of individuality to the Psychologist and Physiologist is one of absorbing interest, it might appear at first sight that on such a theme there could not arise a dispute or a doubt, yet here we find ourselves surrounded with difficulty and some perplexity. "It is by no means easy," quoting the words of Owen,* "to find a name for the relation in which the fissiparous monad stands to the two monads between which it has been equally divided; a parent retains its individuality distinct from its progeny, but the monad has become a part and indeed the chief part of the two that have resulted from its spontaneous fission. Both separate moieties are in an equal degree the same individual as the first created one, from which it may have proceeded by an uninterrupted succession of spontaneous fissions, and in that degree it may be viewed as one of the oldest in creation, the individual having never wholly or bodily become deceased." This subject as well as the doctrine of Parthenogenesis is capable of receiving illustration without end in such a country as this, where nature has been so prodigal of all the forms of animal life. We look with confidence to the rising and subtle intellects of the natives of India to eliminate from such untrodden fields of research, those philosophical deductions which benefit mankind, and raise the profession in the scale of human science.

* On Parthenogenesis or the successive production of procreating individuals from a single ovum, by Richard Owen, F. R. S., London, 1849.

Again, to the present day "spontaneous generation" has been vehemently denied by most men of science, yet recently M. Pouchet has re-opened the question before the French Academy in such a manner as to leave considerable doubt in the minds of some of the sceptical; it is true that his opinions have been opposed by those of the highest authorities in science, but such authorities have not thought it beneath their intelligence to enter the arena of discussion with M. Pouchet, showing that the subject is yet entertained by philosophers on purely physical grounds. "46.3 grains of dust at least a century old were heated for an hour and a quarter to a temperature of 419° Fahrenheit under an oil bath, it was then put into 463 grains weight of artificial water (which being chemically produced could contain no eggs or spores whatever) under a glass receiver. After a lapse of five days at a mean temperature of 62 degrees of Fahrenheit, the receiver was encumbered with infusoria; M. Pouchet, therefore, concludes that had there been any thing in the shape of eggs or spores all would have been destroyed at so high a temperature, and therefore as animalculæ had been produced notwithstanding, they could not have proceeded from eggs, but must have been generated spontaneously." I need hardly point out the illogical conclusion of M. Pouchet, the experiments show, however, that animal life may exist under a form of which at present we have no cognizance.

I am tempted to give one more illustration before I close this division of my subject; it is in its nature so wonderful that the previously received interpretations of some portions of animal existence have been completely revolutionalized. In the year 1849, Owen gave to the world a pamphlet which he called Parthenogenesis or the successive production of procreating individuals from a single

ovum. These doctrines have lately received much development at the hands of Von Siebold, a German naturalist, his views were founded on experiments conducted with such care, and have received so many illustrations from cotemporary naturalists that they have not been doubted. That the virgin laborers in a bee-hive had the power of laying eggs was asserted by Hunter in the Philosophical Transactions of 1792* ; but it is only since the researches of Von Siebold that these eggs have been proved to be capable of producing drones, this he calls the doctrine of the true parthenogenesis ; moreover, from the researches of the before-named naturalist, it has been proved that the Queen Bee has by an effort of will the power of laying male or female eggs ; and what is still more remarkable, that the larvæ of the worker bee deposited by the Queen Bee may be made into a worker bee or a Queen Bee according to the description of food given it, or to quote the translated German words ; † “ From Leuchart’s recent investigations, it appears “ that there really is a qualitative difference between the “ two kinds of food. The larvæ destined to become “ workers only receive the paste prepared by the workers “ in their digestive organs, during the first days of their “ life, whilst in the latter days of their larval existence they “ are fed with pollen and honey ; the Queen larvæ on the con- “ trary are supplied with the above paste during their whole “ larval existence.” This I believe is the first attempt made by a Physiologist to demonstrate by philosophic research, the development of certain forms of animal life subordinate to the powers of the assimilation of food, this assimilation in the present case controlling visceral development.

* Note by Owen.

† On a true parthenogenesis by C. T. G. Von Siebold, translated by W. S. Dallas, F. L. S. London, 1857.

I have mentioned these subjects of discussion and research to show you what fields of unknown science are open before you, what vast outlets for the human mind to develop itself in, and likewise in the hope of stimulating your mental energies by pointing out a few of the untrodden paths for ambitious genius. When you reflect that these various subjects come within the legitimate domain of your profession, that the uncertainty which rests on so many of the laws, which we take as guides—blind guides it may be, in the treatment of disease, you will see there is abundant scope for all the mental energies you may be endowed with. The life of the medical student must be a life of labor, the whole of his intelligence ought to be absorbed in his profession; no exertion is too great, no self sacrifice too exacting, no amount of mental culture superfluous. The knowledge to be gained is at the expense of ceaseless industry, of endless toil, remembering always that every thing must be made subservient and subordinate to the good you are able to accomplish, the relief you are able to give to human suffering.

I hope, however, that enough has been said to prove to you that the intellectual standard of your profession is of the highest order; it is without bounds—capable of endless illustration. I am compelled, however, to confine myself within certain limits lest I should contract the space left me for the consideration of that ethical portion of my subject, concerning which I am now anxious to address you.

The science of Medicine is not a popular study, I mean that those out of the pale of the profession are generally ignorant of its very groundworks. This is not confined to a class only; it will be found amongst those whose education and attainments would lead us to expect the same amount

profession. It is greatly to be attributed to the natural repugnance all have, more or less, to come in contact with the dead, and in some measure to the mass of learned platitudes which have been heaped on the profession by our predecessors.

And yet in your onward course through life, despite this ignorance, your attention will be disturbed by those who come forward with self sufficient conceit, giving currency to vain theories concerning specifics ; one day you will find those who profess to cure every disease by a vegetable dose of medicine, another day cold water is the one thing needed, then hot water, then brandy and salt, with pills to cure every ailment to which the human body is subject, and pills to prolong life, in fact specifics that in turn are to cure every "ill which flesh is heir to" until at last the bewildered mind seeks for a reply to the question "why under such advantageous circumstances do men die?" This must not disconcert you ; in every community you will find those sufficiently wanting in principle or intelligence, call it by whatever name you like, to make you very sensible of the grave influence of such ideas in the world ; in the end your profession will prevail, and these quixotic ideas will give way to the sober influence of truth. Madam De Stael remarking on the prevalence of error declared that "the world was a very clever man composed of a great number of fools." As gentlemen therefore who have received a liberal education this fact must be admitted with regret and sorrow, not met with violence, nor declamation, nor by entering the arena of discussion, but with reserve and "in quietness and confidence shall be your strength."

But while mentally condemning the ignorance or presumption of others, beware that you do not in yourselves

are ever ready to pass hasty judgments on the opinion of others. How difficult is praise! How easy censure! The former finds a resting place only in the minds of a loving and generous order, the latter generally shows more ill nature than wisdom; that it is so common arises in a great measure from the fact that in condemning another, we unconsciously elevate ourselves, and we furthermore expect the world to endorse this opinion.

Let therefore the reality of knowledge, not its shadow, be your guiding star through life, the seeking for—the yearning after truth;* you will not find the pursuit an easy one, if you attempt to step beyond the current facts of the day; none have who have sought untrodden paths. The grandest discoveries of bygone ages, those of Galileo, Newton, Hervey and others are now accepted without question. A child in the present day can glibly state facts, which philosophers have spent many a year in ascertaining; if you are

* There is a marked likeness between the virtue of man and the enlightenment of the globe he inhabits—the same diminishing gradation of vigour up to the limits of their domains, the same essential separation from their contraries—the same twilight at the meeting of the two: a something wider belt than the line where the world rolls into night; that strange twilight of the virtues; that dusky debateable land, wherein zeal becomes impatience, and temperance becomes severity, and justice becomes cruelty, and faith superstition, and each and all vanish into gloom.

“Nevertheless with the greater number of them, though their dimness increases gradually, we may mark the moment of their sunset; and, happily, may turn the shadow back by the way by which it had gone down: but for one, the line of the horizon is irregular and undefined; and this too, the very equator and girdle of them all—Truth; that only one of which there are no degrees, but breaks and rents continually; that pillar of the earth, yet a cloudy pillar; that golden and narrow line, which the very powers and virtues that lean upon it bend, which policy and prudence conceal, which kindness and courtesy modify, which courage overshadows with his shield, imagination covers with her wings, and charity dims with her tears. How difficult must the maintenance of that authority be, which, while it has to restrain the hostility of all the worst principles of man, has also to restrain the disorders of his best—which is continually assaulted by the one and betrayed by the other, and which regards with the same severity the lightest and the boldest violations of its law! There are some faults slight in the sight of love, some errors slight in the estimate of wisdom, but truth forgives no insult, and endures no stain.”

content therefore to plod along the beaten track and never to leave the highway that former ages have made, you will not meet much opposition, you have merely to step in footprints made by others. Remember however that the moment you leave this time-worn path or attempt even to widen the road, your difficulties will commence; do not despair, do not despond. In the earlier ages a new discovery ensured a man cruel persecution; witness the lives of the martyrs to science, they perished nobly and posterity has done them the justice denied by their contemporaries; if you fail in discovery, you can at least do more than accept mechanically the researches that others, after lives spent in intense mental labor, have achieved; you may bring to bear upon their works even in a meaner degree the same qualities that these great men did in their toilsome and successful investigations. In their lives you will find a vital principle, an earnest energy, which placed them above and beyond the evanescent judgment of the selfish and envious.

This leads me to give you a word of caution against the popular works of the day when used as a means of study or as sources of particular information. A "*Vade Mecum*" should never be found in the hands of a student, such a book can only be of questionable use as a reference in the active duties of your profession. The study of Medicine cannot under any circumstances be compressed into a few shallow books culled from various sources and wanting in every thing which makes knowledge valuable, unity depth and thought; your researches should be grounded on large expansive ideas gleaned from works which appeal to the reasoning faculties, taking for their guidance the unerring elements of science. It is the intellectual vice of the day to endeavour to compress information of all kinds into the smallest possible amount of space. The books I speak of will

never assist you in cases of difficulty or emergency, your minds will become cramped and your medical knowledge placed on a treacherous basis if you rely on such sources of information for your guidance. Let your beacon light amidst the rocks and shoals of ignorance and conceit be Truth, that truth which has stood the test of time, which has received the sanction and approval of the great men who have gone before you.

Moreover superficial study shows in the student's mind a certain amount of indolence, a wish in fact to escape that which he can never legitimately escape from, the patient toil the laborious thought, necessary for all sound information; labor is the legacy of human knowledge and if you fail to recognize this axiom, you will fall into the commonest platitudes, and be totally unfit for any responsibility. Indolence never has, nor ever will lead to greatness, that greatness which ought to be the aim of every young man entering a learned profession. This mental activity—this striving after knowledge, this noble inheritance of man's better nature, can be achieved by all who devote their lives to its attainment. But strive humbly though earnestly, remember "the race is not always to the swift, nor the battle to the strong"; and should failure attend your efforts, you will have the satisfaction of knowing that you have toiled in a righteous cause, and have been of benefit to your fellow creatures, and you may then look within your own hearts and find therein a nobler reward, a more lasting, more enduring pleasure than this world's hollow praise.*

* Since writing the above, I find the same idea admirably expressed by Lord Granville in his address to the students of the London University in May last. I cannot refrain from giving the extract in its entirety.

"If there is one man present who feels that he has conscientiously exerted all his faculties of mind and all the resources of his intelligence and yet from

Those among you who are now about to adopt the medical profession as their career in life, should solemnly review the duties they owe to themselves, to their patients, to the community in general, and to the profession of their adoption.

The duties you owe to yourselves are; ceaseless industry, a fixed resolve to trample down prejudice, and to overcome difficulty from whatever quarter it may arise. This mental culture must be commenced at an age when pleasure has its chiefest attractions, and must be continued despite all obstacles with unflinching resolution; let me therefore caution you never by acts of indiscretion to lose that self respect which is sure to follow this healthy exercise of the mind, nor to let temptation, however alluring with its flattering but enervating seductions, cause you to forget the noble object I now set before you.

The duties you owe your patient, require that the trust reposed in you, should be considered in the light of the most sacred confidence, probably his honor, certainly his weakness and life are in your keeping, should you become acquainted with circumstances beyond the pale of your profession, remember that accident only has given you this knowledge and to presume on it would be unpardonable; moreover,

“accidental circumstances has not succeeded, I would tell that man, that though he has lost the brilliant triumph of to-day, it is perfectly impossible that he should not have acquired habits of industry and application; which will render him one of the most valuable members of the community, to such a man I would say as has been beautifully written :”—

- “Life is before ye.—
- “A sacred burden is the life ye bear;
- “Look on it, lift it, bear it solemnly,
- “Stand up, and walk under it, steadfastly.
- “Fail not for sorrow, falter not for sin;
- “Onwards and upwards till the goal ye win.
- “God guard ye, and God guide ye on the way
- “Young pilgrim warriors, who set forth this day.”

imagine for a moment the misery that would result if the wanderings of the oppressed brain, or the reflections of the weakened one, were made the common property of mankind! And here I may remark that the inexperienced are too prone to attribute disease to some bodily infirmity which can be cured by medicine; whereas it may be more correct to say that a large proportion of physical suffering arises primarily from mental causes, over which medicine can have but doubtful power. This class of disease is more common in the present day than formerly, the keen spirit of competition and speculation, now so rife in the world, having led to a large increase of insanity and diseases of the heart; patients laboring under such infirmities require the greatest gentleness of manner, and the utmost charity of spirit.

The duties expected of you by the world, are both numerous and varied; those amongst us who have experienced the rewards sometimes given for the sacrifice of time, labor, anxiety, and sympathy, will tell you that occasions will sometimes arise, when even if you could pour the warm blood of life into the cold, dull, inanimate clay of death, and call back the fleeting spirit to its earthly tenement, you would even then hardly satisfy the requirements laid upon you. Happy they who can look beyond human applause, and seek not for earthly reward, believing that "God is not unrighteous, that he will forget their works and labor that proceedeth of love."

There are duties of the most important kind however that you are expected by the community freely and willingly to fulfil, remember that each of you constitutes an integral part of a great profession and that you are humanly speaking the arbiters of life and death. Your time therefore must be given up as an offering to those who place their lives in your hands, your best energies must be devoted to

their service, the restless irritability of disease must not prevent the calm and patient discharge of your office, the anxiety or want of confidence of friends must not abate your energies, nor must the weariness of protracted watching overcome you, these are the legitimate demands of the world on the profession, and these demands you must be prepared to pay with no niggard hand. The difficulty is further enhanced when it is considered that your every action is watched with a most jealous eye, your opinions questioned, your judgment constantly doubted by the ignorant or the thoughtless; sometimes from the overstrained feelings of your patient's friends, your kindest actions may be misunderstood, and your motives misrepresented; let not such trials as these tempt you to despond, for should there be no cause to accuse yourselves of indifference, neglect, or ignorance, you will be able to meet with calmness the upbraiding of others.

The duties you owe to your profession are likewise of the first importance, you aspire to become members of a society of highly cultivated gentlemen, let it be your aim not to be found unworthy, the honor of your profession should be your constant care, the relief of human suffering, your principal object in life. I have endeavored thus briefly to enumerate the chief duties and obligations that are demanded and expected of you; and the subject should be carefully considered by those who are about to enter a profession, whose members are as a body most jealous of its honour.

How grand therefore in all its details is the prospect before you! a life of labor and self sacrifice! well, may a student of such a profession feel proud of his calling which will bear comparison with any that man can follow, what an incentive to study is the contemplation of its greatness! how glorious are its requirements! how self-sacrificing its duties!

and how far above earthly praise its reward! treasure up I beseech you in your passage through life, the honor of your profession and jealously guard your own integrity and self respect.

In a liberal profession, such as the Medical, where some of the theories of life and disease are yet clouded in uncertainty and are still matters of speculation, and where consequently dogmatic laws should not be recognized, you must not be surprised to find much difference of opinion, nor be disappointed with the results which do occasionally ensue from the best considered plans of relief. Dr. James Brown in his notices of the lives of Locke and Sydenham remarks* “ Let not our young and eager Doctors be scandalized at our views as to the comparative uncertainty of medicine as a science, such has been the opinion of the wisest and most successful masters of the craft. Radcliff used to remark that when young, he had fifty remedies for every disease, and when old, one remedy for fifty diseases,” Dr. James Gregory said “ young men kill their patients, old men let them die.” If the theory of medicine consisted in storing the mind with remedies for particular diseases, the study of it would be a matter of mere memory, such however is not the case, it often displays much science and knowledge to abstain from giving medicine altogether, in particular diseases, and under certain circumstances. If however disregarding the principles of science, you forget yourselves so much as to step in with some new fangled nostrum or specific which is to supplant the operations of nature, you will experience a repulse which will tend to lower you in the estimation of the world and in your own self respect. That disposition to be doing something—that unquietness

* *Horæ Subsecivæ* by John Brown, M. D., Edinburgh, 1858.

of irresolution—that presumption of conceit—has been the cause of much injury to the profession: I once heard a most distinguished and estimable physician in a large meeting of his professional brethren declare, that in looking back on the earlier period of his medical life, he was not certain whether by his interference he had not done more mischief than good. A great step is gained in the intellectual progress of a medical man when he can command enough moral courage to remain simply expectant for the relief of his patient: it is a victory over himself, and is usually achieved when youth has given way to age, and impulse to reflection: you must not misunderstand me, I alluded to that resolve of the sober and matured judgment which teaches when from nature alone relief is to be expected, excluding of course those cases which come within the legitimate domain of active remedies.

The practical knowledge of your profession is gained in the wards of a hospital amongst the poor and helpless, disease is on every side, pain and distress meet you at every turn: In the ardent pursuit of your studies never forget the respect due to human suffering, nor learn to consider the miseries of others as a matter of course. And here let me dwell for a few moments on a subject, the brief consideration of which may not be without profit, standing as you do on the threshold of a career which ought to be a blessing to thousands as well as ennobling your own hearts and minds, but which if evil influences are permitted to gain dominion over you, may prove the melancholy reverse; beware of the deadly effect of habit. Humanity at first naturally shrinks from disease and death, the former sickens—the latter appals, but custom soon reconciles us to contact with both. To a certain extent, this is eminently beneficial, disgust and terror give place to a healthy, manly desire to explore the hidden marvels of the human frame; we approach a sufferer

afflicted, no matter in how loathsome a manner, with all lingering sense of repugnance swallowed up in the desire to ascertain the cause of his malady, and to resort to the aid of all our acquired science and knowledge for his relief; and so again with death, it is no longer the object of weak and ignorant dread, and we pursue our researches into the minutest fragments of that most wonderful of all the physical works of God,—the human body,—with an enlightened, philosophic spirit of reverent enquiry.

My own sense of the solemn and noble influences of the profession to which I have the honor to belong, has caused me to forget for a moment the warning I was about to give you. I meant to explain that what I have been saying ought to be the result of our familiarity with disease and death. Should evil influences prevail however,—should dissipation and idleness lead you astray, the effect may be degrading, and sometimes it is so. Those to whom I allude become hardened, unfeeling, and cruel; physical suffering which once (before habit had deadened the sensibilities) would have called forth their tenderest compassion and solicitude, is passed by with indifference, or at the best with a cold unsympathizing desire to investigate the passing phases of disease. Death too which should never cease to be held in reverence as being in itself an awful mystery, the portal to that unknown region whence “no traveller returns,” even this terrible reality is sometimes treated by those to whom its visible aspect has become familiar with daring levity and presumptuous indifference, more especially by those whose infidelity has admitted doubts of the immortality of the soul. I have considered it my duty to place before you, the effects of this moral dereliction of duty as it comes within the scope of my argument, although I trust

that none here present will ever betray themselves into a development of this depraved mental organization.

You have come here to learn, to make yourselves masters of a deeply philosophic science, and you look and very properly to the Professors of this College for the assistance you need, and for the readiest method of acquiring the information you desire. But all our efforts will not avail unless seconded by your own earnest and constant study; we can but point out the way, it is for you diligently to pursue it, nor is this observation confined to the science of medicine alone; it is one of universal application. When the celebrated painter Opie was asked by one of his students with what he was to mix his colors for the copying of a certain picture, he replied "with brains, Sir." There is no little philosophy and meaning in this brief answer, it teaches you to employ in every study your reasoning powers and your educated senses; it is a lamentable reflection how large a proportion of men are content to follow mechanically the beaten track of their predecessors, how very few comparatively really employ all the best faculties of their nature and all their energies of mind and body in the endeavour to attain to eminence. "What-ever thy hand findeth to do, do it with all thy might" is an injunction which I would earnestly impress on each of you. In every profession there have been many noble examples, whose names will be easily recalled and in whose steps I trust all of you will follow. Let not the difficulties you will have to encounter dishearten you; as is your toil, such will be your reward.

A few words more with regard to your worldly prospects. The publication of the Queen's warrant, coupled with the fact that the Commissions in the Army are open to public

competition, has smoothed your way to an honorable independence, great indeed compared to the position of medical students a few years ago, and with common industry and perseverance, you cannot now humanly speaking fail in your career in life, or if you do so, you will only have yourselves to blame for your want of success.

And now, gentlemen, I must conclude. I feel that I have but inadequately fulfilled my task, it does not arise from the paucity of matter, or the poverty of subject, but from the inability of the lecturer. I have humbly striven to set before you some of the prominent features of your future career, I have endeavored to stimulate your ambition and to make you look on your profession, humanly speaking as second to none. I will not recapitulate but with an earnest wish for your success in the great battle of life, would exhort each of you in the words of our great poet, to follow his advice—

“ This above all,—To thine own self be true ;”

“ And it must follow, as the night the day,”

“ Thou canst not then be false to any man.”



