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How to Study Medicine.

AN INTRODUCTORY LECTURE

BY

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AN INTRODUCTORY LECTURE,

DELIVERED BEFORE THE MEDICAL CLASS OF HARVARD UNIVERSITY, OCTOBER 2, 1871.

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GENTLEMEN OF THE MEDICAL AND DENTAL
SCHOOLS :—

On this eighty-eighth anniversary of the opening of our Medical College, it is my peculiar privilege to welcome you to the old School, with its mode of instruction reformed, amplified, systematized, made progressive.

Here in America nothing is allowed to grow old. Change, and that change often progress, attacks every art, every calling, every institution. As the human body is itself subjected to a constant interchange of atoms, and dies at last through incessant use, so the art of medicine changes season by season; is modified by fashion, or the progress of the sister sciences. The medical knowledge and the medical practice of to-day are not those of twenty years ago; neither should the medical education of to-day be that of former years.

With no abatement of deference and of gratitude for all that the Medical Department of Harvard University has taught us in the past, it is not assumption to hope that its progress in the future will be still more marked. For in this ancient and stable University there has come to pass a change in medical education, more radical, more thorough, and, as we believe, more beneficial in its effects on the future of our profession, than any other since the foundation of our college.

When, seventeen years ago, I sat upon these benches as a medical student at my first course of Lectures, how well I remember my confusion as to *what* I had better do. Aghast at the multitude of subjects of study; overwhelmed by the numerous lectures poured into my ears each hour by a fresh professor; with no one to guide, no rule to follow, no law of selection to consult, no classification of terms, or years or capabilities whatever, what wonder that we

all underwent a mental surfeit, whose consequences tortured our future rest with a nightmare of unassimilated knowledge! Four busy months the course went on with unabated ardor, and then the bulk of the class dispersed, to follow out, with intermittent and languid diligence, their studies during the remainder of the year. The first year's student pursued here the same studies as the third year's one; and if he finally learned what branches to select, it was only at the expense of many wasted weeks, or months.

Any one department of medicine, as anatomy for instance, crowds the beginner with such a mass of isolated facts, that it is several years before he can assort and generalize them for use. But the unfortunate student of former times had *all* departments thrust upon him, at once, to choose from without a guide, and to confuse him with their multifarious details.

The changes in the mode of instruction to which all new students who enter for our medical degree will be subjected, and in which we cordially invite all students who have partially completed their studies, here or elsewhere, to join, are chiefly these:—

Instruction will be uniform and continuous throughout the entire year; and progressive throughout three years.

Studies and students will be classified, and divided into a three years course.

Examinations will be distributed throughout the three years.

The mode of teaching will be more demonstrative, practical and experimental, and less didactic, than formerly.

Lectures, recitations and practical exercises will, as heretofore, all be used as modes of instruction. But the proportion of recitations to lectures will be larger than before; while demonstrative and experimental study, in the Dissecting Room, the Chemical Laboratory, the Microscope Room, the Physiological Laboratory and the Au-

topsy Rooms; and clinical study in the Hospitals and Dispensaries, will be very greatly increased, and supplant, to a certain degree, the college lecture rooms.

This is not the hour in which to discuss the merits of demonstrative and experimental as compared with didactic instruction; clinical teaching with prepared and systematic lectures; or recitations, in which the student takes the active part, with lectures *ex cathedrâ*, where he merely listens and receives ideas.

There can be but little doubt that what we do is fixed by the doing more firmly in the memory, than what we see others do; that what we see makes more impression than what we hear; that what we learn to express in our own language is retained better, than what we are taught by listening to others.

To assure this advantage of the demonstration, the experiment, the clinical study and the recitation over the lecture, it is essential that all the class take active part in those exercises. And this they will be expected to do, since every student will have his place and time in the anatomical, physiological and chemical laboratories, and in the microscope room; and laboratory work will be as much required of him as attendance at lectures.

We would, however, by no means do away with the old lecture system. The lecture brings the teacher face to face with the whole class; gives a living significance to the dry teaching of medical treatises; enables the lecturer to select only those parts of written medicine which are valuable; and to add and enforce much practical wisdom that is not found in books.

We intend, therefore, to offer you full courses of lectures on all those subjects which cannot be made wholly demonstrative, or experimental; and some of which, as the anatomical, surgical and pathological departments, possess a wealth of illustration in plates, preparations and cabinet specimens.

It is sufficient for me, in these few prefatory remarks, to have glanced at the changes with which you will become familiar as the term goes on: and addressing myself now to the *new* members of our medical class, I propose to answer the first question which every student puts to his teacher,

HOW TO STUDY MEDICINE?

A preliminary education is the first requisite. For the mind which has lain fallow during the impressionable years of

youth is ill adapted to catch ideas. It is sluggish to learn, tardy to acquire, and does not know how to use its faculties, although its memory may be retentive and its powers of observation acute. As a rule, men beginning a profession under the drawback of want of training do not arrive at distinction. It is rare to step directly from the plough or the workbench to professional eminence. Such cases are instances of genius, which would rise to the surface in spite of any obstacles.

The average mind, then, needs culture and training before beginning to study medicine. This preliminary education, however, need not be either academic, or collegiate. In fact, the strictly classical courses of many colleges are ill adapted to prepare the mind for medicine.

In our profession two qualities are especially needful, a quick perception and a well-balanced mind. Observation and judgment constitute the true physician. No other learning can compensate for the lack of these; and with these, a relatively ignorant man will succeed. We cannot read the sick by book-knowledge; we must study them as children learn, by observation. The diagnosis and the treatment of disease are a balance of probabilities, and cannot be successfully carried out without judgment, or common sense.

Whatever studies, then, cultivate the perception and the judgment constitute the best preliminary education for the medical profession. The natural sciences, chemistry, physics, natural history, mathematics, educate these faculties more than languages, literature or history; for the latter are better adapted to fluent speech, good memory and elegant tastes. The classics, however, are not to be thrown aside; since a fair knowledge of Latin and Greek is of inestimable value to the reader of medical literature; but such modern languages as the French and German, teeming with scientific research and medical publications, are, beyond doubt, the most directly useful to the physician.

Scientific schools, and schools of technology supply the kind of preliminary knowledge the medical student needs.

The academic department of our own University has been so far modified, of late, as to very well meet these requirements. But such is not the case in the undergraduate *curriculum* of most other colleges.

The natural sciences, the dead languages to a certain degree, and the modern languages are, then, to be especially cultivated

by the student who means to study medicine.

PROFESSIONAL STUDIES.

We come now to the professional studies; the point at which you have arrived, who sit here for the first time.

The profession of medicine embraces both a Science and an Art.

A Science, based on certain fixed and definite branches of knowledge, as Chemistry, Anatomy, Physiology, Pathology.

An Art, consisting in the application of this knowledge to the treatment of disease, in the practice of Medicine, Surgery and Obstetrics.

In the purely scientific parts of medicine lie its only fixed principles and immutable laws. All else is changeable, uncertain, subject to modification from advancing scientific knowledge, and even from caprice.

He therefore who would build the superstructure of his profession on a sound basis can only do so by a profound acquaintance with Chemistry, Anatomy, Physiology and Pathology.

These constitute his earliest studies; and to three of them his first year's course is limited.

CHEMISTRY.

Chemistry is the science of the fundamental structure of both the inorganic and organic worlds. Anatomy deals with compound bodies, though they be but atoms; chemistry deals with the ultimate elements of matter. It is the farthest depth to which we can conduct material investigations into the arcana of nature.

Chemistry concerns man both in his own structure and in everything that surrounds him; both in the discharge of his vital functions and in the changes of his body after death. To seek to know the human body in health, or to minister to it in disease, without chemical knowledge of its composition, or its forces, is to be merely a sciolist.

There was no chemical knowledge of oxygen, carbonic acid and the changes in respiration in the middle ages, and the smallpox patient of that time was shut up in a room with closely-drawn red curtains, the windows battened and the keyholes stopped; while those who had the miliary fever, or sweating sickness—a disease obsolete now—were put between two feather beds, and overlaid, until many expired in great agony.*

It is not too much to say that chemistry deserves the credit of a very large propor-

tion of the advances in the medical knowledge and practice of late years. Its reform of our pharmacopœia has been equally radical, and startling to old authorities. Inert and incompatible remedies have been dissolved by it into their naked uselessness; the active principles of drugs have been eliminated from their crude and bulky envelopes of wood and bark, mucilage and fibre. The nurse's dogma, and even the poor Indian, have been pushed aside in its relentless progress.

It is chemistry, and not homœopathy, which has dissolved the nauseous dose into the minute and cleanly alkaloid; reduced the bulk of remedies, and taught the abuse of drugs.

This science is eminently one of experiment. It advances by questioning nature. It is to be learned by practical work in the laboratory, more than by lectures; the latter serving either to condense and recapitulate previous knowledge, or to illustrate, on a large scale, the effects of reagents on each other. Your first months of study should be passed in learning general chemistry at your desk in the laboratory, with reagents, blowpipe and test-tube. In the basement story we have now arranged ample facilities for the practical pursuit of chemistry, where one hundred desks, with apparatus, have been prepared for the use of the class.

ANATOMY.

Anatomy, the cutting apart or dissecting of organized beings to learn how and of what they are made, is the most direct and fundamental, though it was not the earliest mode of understanding the human frame. Oracles, spiritualists, augurs, seers, priestly jugglers were the first authorities in medical matters; while Aristotle or Galen were still permitted to dissect only horses or dogs.

The self-sacrifice of Vesalius and other noble martyrs of anatomical science, and, among others, the life-long labors of Hunter, finally accumulated such a mass of information, and so conclusively proved its value, that the world got habituated to dissections, and allowed them to be peaceably pursued. Here in Massachusetts, the enlightened public opinion of the Commonwealth has legalized the practice of human dissection; a credit not yet shared, we regret to say, by many others of the United States.

It would be an idle abuse of our time to delay you with an explanation of the cardinal importance of anatomy to the medical student. The fact is self evident, that this science is the very foundation of all his

* Hecker's "Epidemics of the Middle Ages."

other knowledge. It is, too, an exact and assured science; capable of demonstration; unchanged in its essentials for years past; occasionally altered in nomenclature and enlarged by new facts, but never losing a single approved truth, as laid bare by the scalpel. Its changes have been chiefly those of histology; while its grosser facts remain as fresh as in the days of Albinus.

It is equally capable of proof how directly surgery springs from, and is dependent on, anatomy. Surgical diagnosis is, to a great degree, anatomy applied; surgical operations are dissections on the living subject. Of this one fact you may be quite sure, that no man ever was an eminent surgeon who was not a good anatomist; and, also, that no surgeon was ever a good operator without having been first a neat dissector. The pains-taking, conscientious student who haunts the dissecting room in his leisure hours, to watch others if not to work himself, is, in nine cases out of ten, the one who becomes a good surgeon or a good physician. To neglect anatomy is to throw away everything. It should occupy all the time that you can possibly devote to it. Fortunate if you have already acquired a sufficient knowledge of general chemistry, before coming to the medical school, to enable you to give all your first year to anatomy, and its directly related science, physiology.

Of the dire effects of the lack of anatomical knowledge in the surgeon, hear John Bell:—

“If a surgeon, ignorant of the parts of the human body, should be called to perform even an established and regular operation, which he has often seen performed, how must he tremble at the thoughts of what he has to do! Acting only as he has seen others act, he is interrupted, startled, perplexed, with every new occurrence. He has foreseen nothing, provided for no accident, and every accident alarms him. He moves timorously onwards, like a blind man who walks with an air of confidence on an accustomed road, but when any new object presents itself, or the road is changed, is bewildered and lost.

“We see untaught men operating upon their fellow-creatures in cases of life and death without the slightest knowledge of the anatomy of the parts, much less any right ideas of their conditions, and new relations to each other in the state of disease.

“But such operators are seen agitated, miserable, trembling—hesitating in the midst of difficulties—turning round to their friends for that support which should come

from within—feeling in the way of things they do not understand—holding consultations amid the cries of the patient; and thus, while they are making ungenerous struggles to gain a false reputation, they are incurring reproaches which attend them through life.”

You must take the knife into your own hand if you want to learn and remember anatomy. There is no royal road to this knowledge. Lectures, recitations, plates, books, all assist, but none can take the place of the dead body, in pursuing this science. You must dissect *con amore*; and, strange as this may sound to you, you will find it, in a few weeks, a fascinating pursuit. The marvellous machinery of life which you unfold layer by layer; the ideas you will receive; the analogies, not only to the rest of organic nature, but even to all the nicer mechanical laws and appliances; the pleasure of manipulating and seeing for yourself all that you have read in books; the combination of bodily and mental occupation, and the stimulus of the occasional discovery of anomalies and variations, all will lead you on, until you will find that nowhere do the hours fly so fast as in the dissecting room, and to no hours will you look back with a greater pleasure or satisfaction.

An experience of eight years as demonstrator has taught me—and you will see in the preface of my predecessor's Manual of Dissections that he shares the same views—that systematic treatises, illustrated dissectors, or plates, are a positive evil while dissecting. One simple book of dissections, like Harrison's, or Hodges's, or Ellis's Demonstrations, is all that is best.

Plates distract your attention from the dead subject; lead you to anticipate nature, and deceive you into thinking you have mastered the points thus illustrated, before you really know them. The whole subject-matter of your morning's or evening's dissection should be thoroughly “read up” before you enter the dissecting room; you must anticipate mentally what you are going to find under each covering of cellular tissue or fascia, and not turn to the book to see what it is after you have laid it bare. The mind must go before the eye, and the eye before the knife. Thus doing, you will find the country-lad, with his single worn copy of Wilson, surpass in anatomical knowledge him who pursues a more indolent course of dissections with the text-book of Gray and the plates of Bourguery.

The anatomical lecture is a daily lesson

of external appearance. It condenses and illustrates by a thousand analogies, diagrams or specimens, all that you labor out by yourselves. It explains to you, also, very many parts of anatomy that you cannot dissect. By no means neglect to follow it diligently; but also read, recite, and, above all, dissect, if you wish to know anatomy.

Recitations held over the dissected subject have seemed to me to fill a very useful place since I introduced them here some ten years ago. And you will find them continued now, even more fully than before.

As much time as you can spare must also be given to the microscope. It is in this direction that anatomical and pathological science are now making their chief advances. Fortunately the cost of these instruments is now reduced, so that the majority of students can afford to own one.

Finally, there is regional, or surgical anatomy, which is yet another department of this science. This you will learn in your second year. By it you are taught to mass your anatomical details into regions or groups, just as they exist in nature; as, for instance, in the anatomy of the neck, the axilla, or the groin. This is the form of anatomy you will use and mentally refer to, in the actual practice of your profession.

PHYSIOLOGY.

We now pass on to the remaining study of the first year, viz., *Physiology*. By this we mean the study of the *functions* of the body in health; as anatomy was the study of its structure.

Physiology, comparatively a modern science, has made great advances of late years, and is still in a transition state. As influencing and correcting the *practice* of medicine it is the most important of either the departments. Without the truths which it has taught us of the functions of different organs in health, in disease and under the influence of various medicinal agents, the science and practice of medicine would sink back a century.

The physiological effect of various lesions and the physiological action of drugs, are the modes of studying this department most directly conducive to practical results. Experiments have also often been verified by the absence or modification of certain functions in disease. We may all of us conduct a series of harmless experiments on ourselves in health. By Dr. Hammond in this country, and by numerous experimenters abroad, very useful results have been arrived at in this way.

Physiology is learned, like chemistry,

only by experiment. It is to be pursued in a laboratory, and chiefly by experiments on the lower animals. The study by vivisection of the humbler members of the animal kingdom appears a very cruel one. And so it may, thoughtlessly, be made. We deprecate unnecessary repetitions of experiments; carelessness in causing pain, or consecutive mutilations of the same animal. But for the necessity and propriety of physiological vivisections, poisonings and medications of the lower animals, we would put in an earnest plea. By this path alone can therapeutics advance in certain knowledge. Experiments on the vital functions, and on the action of drugs are of the last importance to the well-being of man. We do not hesitate to use the lower animals for food. Why should we not use them to teach us to avoid pain, or disease? A swarm of insects would be ruthlessly destroyed that one man might sleep. Are a hundred or a thousand batrachian lives to be counted in the balance of human suffering?

Most opportunely, at the very time when we were obliged to look around for some way of teaching physiology in accordance with the new system of study, the thoughtful benefaction of one of your number, recently deceased—Dr. George Woodbury Swett—has given us the means to fit up a physiological laboratory, with microscope-rooms adjoining, in the upper story of this building.

Physiology may be advantageously followed, not only throughout the whole course, but even in the earlier years of practice. Experiments on one's self, especially in diet, regimen, or the taking of drugs, may often be carried on without interrupting the business of life. In no science does it hold so true that the student, of to-day, is the discoverer, of to-morrow.

PATHOLOGY.

Fourth and last of the group of *pure sciences* is *Pathology*: the study of the changes in the organs produced by disease; or, as it has been appropriately called, *morbid anatomy*. This is the only sound basis for the study of the natural history of organic disease, and is the final test of diagnosis.

The facilities for making autopsies are but grudgingly allowed by the general public. We cannot hope, under our form of government, for those far-reaching scientific edicts which enable a despotism to regulate the disposal of its subjects' remains as strictly as it regulates their lives. Popular prejudice and public opinion are sad stumbling blocks to be overcome.

You will, during your student years, have better facilities for pursuing pathology than you can enjoy in after life.

Let me urge you, then, never to neglect going to an autopsy. You will realize ten years hence, when settled, perhaps in a community that will rarely permit them, how great a boon a *post-mortem* examination of an obscure case would be to you. You will, I regret to say, see such examinations sometimes made in an imperfect manner through ignorance. You will even see the course of justice rendered uncertain by the incongruous results of coroners' inquests conducted by incompetent men.

As soon as you have acquired sufficient knowledge of healthy anatomy to appreciate morbid changes, frequent the autopsy room of the hospitals. Learn how to make an autopsy patiently and thoroughly. Follow out the case with care. Compare its past symptoms with the evidences of disease now patent to your eyes. Neglect almost anything else rather than miss an autopsy. It is worth more to you than a field-day of capital operations in the amphitheatre, or the most eloquent lecture on disease.

Neither does pathological research stop now with the ordinary *post-mortem* investigation. On the contrary, it has only just begun. The microscope takes up the inquiry when the eye fails; and the most important discoveries of morbid changes are now made through its aid. Microscopical sections of diseased organs are a necessary sequence of the *post-mortem* examination. In such sections, and in the minute study of tissues, rather than cells, we see a partial return to the doctrines of Bichat. Microscopical sections reveal to us the pathology of tumors; the organic changes of the kidney, the brain or the heart. The discovery by microscopists of the cells of the connective tissue has overturned the older pathology, and substituted a clearer one. The microscope room, therefore, should be your resort during all the years of your study; since you will there seek to unravel the complexities of both healthy and morbid anatomy.

Finally, pathology is to be studied not only in the dead-house, but also in the Museum. That precious collection, brought together and cared for by the life-long devotion of the senior member of this faculty, is a monument of scientific industry. You will find the description and exhibition of morbid specimens, there collected, of inestimable value to you: and I venture to say

that every physician who has a wish that he could enjoy those privileges now.

Chemistry, or the elements; *Anatomy*, or the healthy structure; *Physiology*, or the functions, of the human body, comprise the total of what you should seek to master during your first year of medical study.

Pathology, or the morbid changes of the body through disease, should follow next; and completes the purely scientific part of your profession. We pass now to the *ART*; or to science applied to the treatment of disease.

SURGERY.

Surgery should be studied next, and before the other branches of medicine. We place it first, for two reasons: it is the direct outgrowth of anatomy; and it constitutes a sort of external pathology. Fractures, wounds and tumors can be seen, recognized and studied more easily than dyspepsia, gastro-enteritis, or cirrhosis. It is in great part, also, a demonstrative study, to be taught in hospital wards and operating theatres.

Every young student would be a surgeon. Every young student, too, thinks more of operations, than of surgical pathology and practice. They get over both these errors in a few years. In reality operative surgery is not worthy of the attention that surgical diagnosis and treatment are. So, too, minor surgery is slighted for capital and bloody operations. As the Roman mob was attracted to the Flavian Amphitheatre only by hecatombs of victims, so the medical classes crowd our amphitheatres on field days of amputations, and desert their seats when nothing is to be done greater than a felon, a fistula or a hydrocele. In five years they find out their mistake; there is no audience so patient, on minor days in the hospitals, as one of young physicians.

In truth, the operative part of surgery is a very small part of that science. To diagnose an intra-capsular fracture of the shoulder or hip, or an abdominal tumor, is a far greater test of the surgeon.

Systematic courses on the principles and practice of surgery are necessary to the student. They teach us by experience; collate cases; illustrate by plates, models and specimens, and lay down for us the rules of surgical practice. The greater part, however, of practical surgery is taught clinically, in the hospitals: either by visits in the wards; by visits to a few cases, followed by a lecture; or by bringing each case before the audience and lecturing upon

it separate. Each mode possesses certain advantages. Clinical surgery, then, should occupy a due share of your attention.

The time has now arrived, in your second year, when you should begin to visit the hospitals. During the first year you had better remain in the dissecting room and the laboratories. We advise you to begin your clinical studies in the surgical part; and to devote your time, at first, to the dispensary and to the out-patient department of the hospitals. Here you will see minor surgery, and large classes of the more easily understood surgical cases. After three months spent there, and in the amphitheatres, seeing operations and listening to clinical lectures, you should begin to visit the wards, and continue your visits faithfully, as often as possible, until you graduate.

When you have once acquired knowledge enough to profit by hospital visits, you cannot spend too much time in them. But to see cases of fracture before you have studied the anatomy of the bones, or injuries and wounds before you can distinguish one tissue from another, is worse than a waste of time, since you are deluded into a false knowledge.

MATERIA MEDICA.

Before going into action the soldier must be taught the use of his arms: equally, before combatting disease, the student must become familiar with his weapons. All the medicinal agents of his *armamentarium* are included in *Materia Medica*. This should be studied under four heads, in a natural sequence, thus:—

- Botany;
- Pharmacy;
- Physiological action of drugs;
- Therapeutical action of drugs.

Botany, though insisted on in European schools, is greatly neglected in this country. It should form a part of the preliminary education of the medical student. And, during his second summer in the medical school, he should cultivate medical botany. This really forms a pleasant relaxation from his heavier studies; and a familiar acquaintance with the native *materia medica* of his neighborhood will give him a wider field from which to cull his remedies.

Pharmacy, the compounding and dispensing of drugs, can be properly studied only in an apothecary's shop. Practical instruction should be particularly insisted on in this department, for in none is the ignorance of the profession so prevalent or so disgraceful. Many physicians do not know the drugs they are giving, by sight; still less do they understand compounding

them. Incompatible messes that cannot be made to run from the bottle, and others that decompose instantly on exposure to the sunlight, are daily prepared under the physician's prescription. There were lately prepared for a sick person powders containing the same materials which, in the ordnance department, are used to fill percussion shells. They require trituration with great care; and it is fortunate if they explode in the mortar of the compounder, rather than in the stomach of the patient.

The adulteration of drugs, which the physician, unacquainted with botany and practical pharmacy, may fail to recognize; and the combining of incompatible and nauseous doses, are fertile sources of scepticism as to the influence of any medicine in disease.

Botany and practical pharmacy should divide the second summer with pathology and hospital work. The study of the physiological action of drugs should be carried on in the laboratory, and in experiments on each other.

Medical chemistry will here demand a good share of attention, under its three chief divisions of incompatibles, toxicology, and urinary analysis.

According to the scheme of examinations, pathology, *materia medica* and medical chemistry terminate with the second year. Surgery, and the remaining studies to be named, extend through both the second and third years, and form the subjects of the final examination.

THEORY AND PRACTICE.

We come now to Theory and Practice, as it used to be called, or, more properly, the Science and Practice of medicine. This embraces the natural history of disease, clinical medicine and therapeutics.

In this department your attention should be equally given to full and careful courses of lectures detailing the history of medicine, and to the observation and treatment of the sick, clinically.

In pursuing clinical medicine, or surgery, and studying the symptoms and changing aspects of disease at the bedside, all the higher faculties of observation, comparison, deduction and judgment will come into use. It will be fortunate for you if the perceptive powers have been carefully trained by your previous study of the purely scientific branches of medicine. Sharpen your wits; use your eyes; keep always alert, and never neglect the slightest indication which points to a change in the delicate barometer of disease. Here is the true

field of your future labors, and by your skill in diagnosis, you will be judged all through life. I remember well the remark of my teacher, once, as we were passing the open door of a long ward of fever cases: "Nolan is better to-day," said he, glancing in, and alluding to a patient with severe typhoid, placed at the farther end of the room. "How do you judge?" asked I, surprised. "He has turned upon his side," was the quiet rejoinder. And so it proved; for the first signs of convalescence had come on.

Nothing is too trivial to be noticed in a case of acute disease; and from the minuteness and accuracy of description of the older observers, from Hippocrates or Sydenham down, we may well believe, that without any of the appliances of modern science by which we test the working of the thoracic or urinary organs, or the temperature of the body, they arrived at nearly as correct a notion of acute disease and of prognosis as we can do now. By all means study, and avail yourselves of every instrument and every aid to diagnosis which science puts in your hands; but beware that your eyes are not blinded, or your ears closed by authority, habit, tradition or purely scientific accuracy, to the faint symptoms of the expression, the breathing, the position or the voice of the very sick. As an example; to uncover the abdomen and look at the play of the diaphragm in a child gasping for breath will tell you whether you have to deal with croup or pneumonia. Do not repeat the mistake made by a young medical philosopher in my student days, who, when asked what he thought of a dying man by whose bedside he was standing, replied, that he would say "after he had examined his urine."

Do not neglect common cases for the rare ones, and do not overlook a chronic disease; for it is the common cases that will fill your practice, and the chronic ones that will prove your trial, through life. Work up your cases for the clinical conference. Get a case to treat yourselves, when you can. How that first case sinks into the memory! As years go on it is overlaid by a hundred others, but it is never blotted out. The first case of each disease stands to you as a clear-cut proto-type, to which to refer, and with which to compare, all the rest, forever.

OBSTETRICS.

In your third year you will come to the eighth and last great department of your profession, *Obstetrics*: and in this are usu-

ally included the diseases of women and children.

Equally important with others, the study of midwifery will lead you into a somewhat different field. An accurate knowledge of anatomy will stand you in good stead here. Study thoroughly the position and the relations of the female pelvic organs in the dead subject. Lectures, experiments with the manikin and actual cases of labor are equally needful to you to master this branch of medicine.

Medical Jurisprudence is a subdivision of our art about which we should know something, as those learn to their cost who are called into court to testify. Most colleges give a short course on it. It is naturally divisible into two parts.

First, The rules of expert testimony and the practice of courts of law, which would be best taught by lectures from a jurist.

Second, Expert testimony in toxicology, in surgery, in anatomy, in psychology and in obstetrics, which would be better learned in connection with each of those departments.

Finally, we have *specialties*; of which psychology, the eye, the ear, the skin, and syphilis are the chief, but by no means all. We have neither time nor occasion to dwell on them. We feel that we ought to utter one word of caution, however. Do not undertake the study of a specialty, until you have finished a complete medical education. And, if you practise a specialty, beware lest you lose sight of the general symptoms of your patient.

To recapitulate the order in which we would advise you to study medicine:—

Chemistry, anatomy, physiology.

Pathology, surgery, materia medica, medical chemistry.

Science and practice of medicine, therapeutics, obstetrics.

Medical jurisprudence, specialties.

We have thus provided a *three years'* course. Would that it could be made a four years' one. At present, however, this is as long as many of you can devote to professional study. For the more fortunate few who have a fourth year at their disposal, there are two ways in which it can be profitably spent; either in a hospital here, or by studying in Europe. If you can live a year in a hospital as house-physician or surgeon, you will gain more practical knowledge than you can possibly do in an equal time abroad, because you will here treat cases, and therefore remember them. Where but one can be had, we should prefer the year in hospital at home, to Europe.

will be enjoyed, a year or two abroad is extremely valuable. It enables you to pursue one or more special branches farther than you can in this country. Your medical education, so far from being finished, is only begun when you get your degree. We all regard ourselves as fellow-students of a science to be followed through life.

And when that eventful hour has come that you begin your career as a doctor, what more is needed? Practice, certainly; and it will be slow to come. Earlier in the country village than in the town; earlier in the town than in the city; while in a metropolis like London, an average lifetime is two-thirds spent before the harvest season can be reached. Slow enough and hard enough anywhere; yet, if you persevere, it will come at last. But whether in your earlier and poorer, or your later and successful years, you will need something more than practice.

Medicine is not a trade, and if you make it one you will bitterly repent it. It is not a calling in which to grow rich. It can never command the enormous income of the eminent lawyer, even when the practice lies in a large and wealthy community; while the ventures and receipts of business men dwarf our year's earnings by one happy speculation, or one large sale. If you seek for wealth you have mistaken your avocation. The majority of you will earn a respectable livelihood, after from five to ten years of waiting and poverty. Add to this delay the outlay of your education, and the return for your investment will be very small.

Whatever your success, you will absolutely want something more to make your profession even tolerable to you. Bear in mind that ours is the most laborious and wearisome of callings; the slowest to rise; the easiest overthrown by ill reports; dependent on the caprice of women; subjected to the indignities of doubt and rejection by patients; full of responsibilities, which grow the faster as you ascend the social scale. The Doctor is the bearer of other people's burdens; the confidant and adviser in other people's sins and woes; the anxious watcher, whose mind is never free from a round of sick cases; the man who can never be his own master.

For years, while you still trudge on foot, you will be covered with the dust of the charlatan, who rolls by you in his chariot.

For years after you have begun to lose a little, week by week, of the buoyancy of youth, you shall be stigmatized as "such a

very young man!" The older you grow, the harder you shall work; and your office-bell shall never cease to call you until your ears are closed in death. For your hands will be reserved tasks before which a scavenger would recoil. For you, other people's sufferings shall be constantly your own. Your cruel calling shall compel you secretly to watch the progress of hopeless disease, while you must sustain hope till the last. You must not only witness the sad partings of death, but on you will devolve the duty of telling friends or patients that all chance of life is past. To you, in your rides, shall come home that terrible question, after a sudden and unexpected fatal result, "could I have known more, or done more?" To you may sometimes come the harder reflections of friends, that you mistook the case. And to you it shall often happen, after success has crowned your efforts, and your patient has got well against hope, to meet with the lowest ingratitude, and to have your bill disputed in the end.

In spite of all this, the tide of students never ceases, and the profession is crowded with young doctors, year after year. What feeling calls them? What sentiment can sustain them in after life? Money is not to be largely got. Practice alone is not enough. There must be something more, and something higher.

That something is a *love of your profession*; a passion for science for its own sake; a broad humanity, which covers all the sick with a mantle of charity. Hold fast to that love and that science, if you would not sink from weariness in your earlier years, or find the fruits of success but chaff, in your old age. Never lose sight of that motive, for if it once takes flight, your profession is reduced to a trade, and there is absolutely nothing left. As long as you can keep alive the sacred flame of this early passion which first called you to embrace the medical profession, so long shall you be warmed, sustained, upheld amid disappointment, unjust treatment or reverses.

In the admirable introductory address, delivered here one year ago by the Adjunct Professor of Chemistry, many of the changes were foreshadowed which have since come to pass in this school. The key-note was struck then, which brought all the wandering strains of opinion on reform and advance in education, into one accord.

This Faculty, in listening to what they believe to be the need of the times, have adopted those changes, and made them as

thorough as they can do, now. Foreseeing that they have done so, probably, at the risk of a loss in the number of their students, for the time, at least, they cannot be accused of having taken up this new system with any expectation of individual benefit, but quite the reverse. For it cannot be too plainly stated, that this department of Harvard University is not endowed; and that a sufficient amount of receipts from the classes, to meet its current expenses, is indispensable to its existence as a medical school.

The Faculty have initiated these advances in medical education because they believe them right, and proper, and demanded.

Because they, and every person in this room, can see, that the position of our noble profession in the community of to-day is not what it should be, and not what it was fifty years ago. That there is a lower standard of respect and of knowledge creeping in; that quackeries increase; and that one Doctor is thought as good as another, because a *Degree*, in America, can be too easily acquired.

We believe that there is but one remedy. To RAISE THE STANDARD OF MEDICAL EDUCATION is the only way to recover the position which our Fathers held, and which we should retain.



