

Draper (Jno W.)

LECTURE.

INTRODUCTORY TO THE COURSE OF 1869-70,

IN THE

MEDICAL DEPARTMENT

OF THE

UNIVERSITY OF NEW YORK,

Box 3.
BY

JOHN W. DRAPER, M. D.,

PRESIDENT OF THE FACULTY.

NEW YORK:

JOHN SARELL, PRINTER AND PUBLISHER,

72 BROADWAY.

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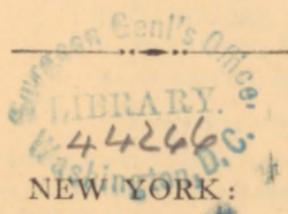
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NEW YORK, Oct. 19th, 1869.

Prof. JOHN W. DRAPER, M. D. LL. D. :

Dear Sir: At a meeting of the class of the University Medical College, held last evening, E. F. PRESTON, being in the chair, and M. H. WILLIAMS, Secretary; it was unanimously

"Resolved, That a Committee be appointed to solicit our President, Professor JOHN W. DRAPER, to furnish for publication; a copy of his practical and highly appreciated address delivered this evening at the opening of our new College Building and the Winter Session."

We, the undersigned, having been designated such Committee, take pleasure in carrying out the wishes of the class, and do earnestly ask that you comply with our request.

Assuring you in behalf of the class, of the high esteem in which you are held as the student's friend and counsellor, and hoping that you may live, long to enjoy the result of your labors in this Institution, We are, sir,

Yours Respectfully,

M. H. WILLIAMS, New York, (Chairman.)
G. W. GRAHAM, North Carolina.
E. F. PRESTON, New Jersey.
J. S. OSMENT, Tennessee.
W. H. AUSTIN, Vermont.
G. BROCKHAUSEN, Missouri.
I. D. GRAVES, Georgia.
F. COMMLOSSY, Germany.
W. T. BACON, Connecticut.
A. W. CAMPBELL, Jamaica.
W. G. SYKES, Mississippi.
D. S. DRAKE, Alabama.
M. DADRIAN, Asia Minor.
L. I. EVANS, Pennsylvania.
R. DE J. FLORES, Costa Rica.
C. FORTUN, Cuba.
A. M. HILL, Texas.
S. W. HARRISON, Rhode Island.
D. H. KITCHEN, Canada.
J. M. DE KONINCK, Belgium.
A. ZAVALA, Ecuador.
J. T. PENCE, Virginia.
J. D. ROGERS, Minnesota.
L. SHERMAN, Wisconsin.
A. D. SMITH, Illinois.

UNIVERSITY—NEW YORK, Oct. 20th, 1869.

GENTLEMEN: With very great pleasure I place a copy of my Lecture at your disposal. Please convey to the class my thanks for the honor they do me in making this request and my best wishes for their individual happiness and prosperity.

Yours truly,

JOHN W. DRAPER.

Mr. M. H. WILLIAMS and other gentlemen of the Committee.

LECTURE .

WE meet this evening for the purpose of opening a new edifice for the Medical Department of the University of New York, in place of the one accidentally burned.

You have come here to study. Let us then spend this preliminary hour in considering how you may best carry out your intention ; what you ought to study and how you ought to study.

It is not you alone who are interested in such inquiries. In every department, from the primary to the most advanced, in general education, in professional education, the same questions are being asked, and not only in America, but elsewhere in foreign countries. There is a growing impression that our systems of instruction are not what they ought to be—that they are not in harmony with the requirements of the times.

The new building in which I stand, the audience of young men who have favored me with their presence, the circumstances and the hour render it very appropriate for me to offer a few remarks on the subject of public education. I shall direct my observations more particularly to the case of professional education, which specially interests you, but shall not limit myself exclusively to it. Perhaps you will acquit me of egotism if I add—for it may give emphasis to what is said—that the statements I shall make are the results of an experience of more than thirty years in academical and medical colleges.

When first I attended lectures as a student in the University of Pennsylvania—an institution which should be held in veneration by all American physicians, for it was the first medical college established on this side of the Atlantic—there was a faculty which, for learning and celebrity, had never and nowhere been excelled. Yet it often occurred to me, while listening to the lectures, how great was the waste of time, how imperfect the plan pursued. Our class repaired to the lecture-room, the professor made his appearance, read from his manuscript for an hour, the bell rang, the book was closed, and we were dismissed to another room to go through another—a similar performance.

Now, was it at all strange that the suggestion should occur to persons of a reflecting turn that it would have been much better to print what had been thus read and give it to the pupil to study? There would have been a great saving of time, and, to use medical phraseology, the material would have been more perfectly digested. Looking at things in this way, it was plain that there were certain topics which might be taught better than through the instrumentality of lectures; but it was equally plain that there were other topics which could not be profitably taught in any other way—such are Chemistry, Anatomy, Physiology, and Materia Medica. In these appropriately termed demonstrative topics you must witness experiments, see and perform dissections, and examine specimens with your own eyes.

The exclusive lecture system at that time prevailing in all our colleges was thus ill adapted to half the subjects taught. Yet it was a very venerable system. We had obtained it from the European schools. It had been handed down from one to another of them for more than a thousand years. The first, the oldest medical college in Europe—that at Salerno, in Italy—was founded by learned Saracens before the time of Charlemagne. They introduced this lecture system as well adapted to their times. It survived long after they had passed away and the times had completely changed.

It was perfectly adapted to those times. I would ask you to bear in mind the remark I am going to make, for it has a far wider application than might, at the first glance, be supposed. This reading from manuscript was admirably adapted to an age prior to the introduction of paper and printing—an age in which books were scarce and persons who could read them very few. But what answers perfectly in a non-reading community will not answer for one in which every person can read.

Let me offer you an illustration which will give emphasis to these remarks—an illustration derived from what we all consider to be the highest and most important portion of instruction, that which is connected with religious worship. If we consider the religious services of any Christian denomination, we may discern that they consist essentially of two distinct portions—devotion and instruction. The former is manifested by singing and prayer, the latter by the reading of the Scriptures and the sermon. Now, among the non-reading communities of the times when these services were adopted, what could be more effective? Bibles were very scarce, readers were very few. Could anything better be done than to call the people together, and read to them a short portion of the Scriptures—anything better for the edification of those who hardly knew how to reason than to select a few words as a text and expound their meaning and application? This constituted the sermon.

There are persons who say that men in these latter days have become less religious than formerly—that they wantonly indulge in neglect, and that the pulpit has ceased to influence them. But I think that such a denunciation is at once harsh and unjust, and that to form a correct opinion on this subject we must remember that we live in changed times—when books are plentiful, and when every one can read.

The conclusion I wish to draw from the example to which I have referred is this : that for effectiveness in instruction of any kind there must be adaptation to the wants and circumstances of the times. Modes which centuries ago answered their purpose perfectly well may do so no more.

The agent which has brought about the change we are here considering—the press—is itself no exception. Its productions are undergoing modifications to meet the modern requirements. If the newspaper has usurped the position of the pulpit, and has constituted itself the chief public instructor, with ever-increasing powers, telling us each morning what has been going on all over the world the day before, its operation has been very far from being altogether for good. Its editorials have taught us to expect the pith of a matter condensed into a few sentences ; it has ministered in no small degree to that superficiality which is the bane of our times. Except on topics which have a special interest, the thoughtful elaboration which formerly characterized the productions of the press will no longer be endured. We satisfy ourselves with the critique of some newspaper notice, or with a review in some monthly or

quarterly journal. The journalist and pamphleteer are fast superseding the author. The "Principia" of Newton or the "System of the World" of Laplace, if it could find a publisher now-a-days, would certainly not find many purchasers.

I have told you what were my impressions of the system of instruction by lectures when attending a medical college more than thirty years ago. When this medical department of the University of New York was founded in 1841, it was determined to remedy those defects as far as we could. Dr. Mott, who was then our Professor of Surgery opened a clinique in his class-room for the practical demonstration of such surgical operations as could, under those circumstances, be performed. This was followed by a similar clinique in connection with the practice of medicine, and, on these being found to work satisfactorily, by another in connection with obstetrics. This introduction of practical instruction was a great innovation on the system which, up to that time, had prevailed in American colleges. That it was an advance in the right direction is shown by the fact that the clinique once a week undertaken by Dr. Mott has expanded into fourteen, for such is the number you are to attend this session.

Of all our schools, either of common or professional instruction, I believe that medical colleges, though far from being altogether satisfactory, have been conducted on the most correct principles. The instance just alluded to is only one out of many that might have been presented showing that in our profession there has been, on all hands, a desire to adapt the courses of instruction to the requirements of the times. Whilst there has been conservatism enough in making these changes slowly, there has been no fettering by an undue observance of obsolete traditions, no adherence to any system simply because it seemed to be authorized by long usage. On the contrary, the long-continued usage of any topic or mode at once suggested the need of inquiry—examination whether such topics did not require re-modelling, such modes renovation or perhaps rejection.

Let us see if we cannot make our experience useful in other quarters, for we are here dealing with the subject of public education. Let us turn for a moment from our modernized medical colleges to our primary schools.

As soon as a child can speak his mouth is full of questions. He wants to know why this is and what that is for. He feels his needs better than many a schoolmaster does. With the little stock of information he has gathered you send him to school. You take him

from the real, from the things he can see, things in which he feels an interest, you plunge him into the abstract. Instead of telling him about the world in which he has come to live, and the sky and the stars, the mountains, the rivers, the oceans, the trees, you stupefy him with grammar; orthography, etymology, syntax, prosody, nouns and verbs, cases and moods and tenses bewilder his imagination. It is impossible that he should have any just conception of these things or their relations. I appeal to the experience of every person here, and assert that it is impossible for any one to appreciate these things until his mind approaches maturity. The philosophy of language is no simple affair; yet grammar is the philosophy of language, and we try to initiate children into its mysteries because a tradition has come down to us that it is well to do so. Such stress has been laid on this particular point that we have even been in the habit of designating our primary schools as grammar schools, thereby pointing out the main element they were supposed to impart. Like the old-fashioned medical colleges to which we have referred, the grammar school is of remote antiquity. There was a time when it supplied satisfactorily the intellectual want, but that time has long ago gone by. It was when youths, not children, went to school; when a knowledge of words, not a knowledge of things, was prized.

Then comes the great practical question what ought to be done?—what are the changes that should be made in our existing methods.

In a short time you are to be practising physicians, and this is a question which will often be put to you by many an anxious parent, sometimes in the case of precocious and vigorous children, often in the case of those in feeble health. While I am answering a pressing public inquiry, I am, therefore, suggesting thoughts which may be of professional service to you. Indeed, in one sense, it is physicians alone who can properly solve this problem of the right education of the young, it is essentially a physiological problem, and of all men they are most familiar with the conditions on which its solution rests. The immature brain must never be exercised beyond its power, nor must the power that it has be exerted in an unsuitable direction. We must not measure by the capacity and tastes of the adult the capacity and tastes of the child. Physicians who have been long in practice will bear me witness that many a brain has been ruined by that mistake, and has been rendered sluggish and stupid for life. Instead of adopting such a standard, our proper course is to observe the manner in which the mind develops, the peculiar characteristics it manifests as it is becoming older, and

adapt our schemes of instruction that they may be in harmony with that development, and neither be obstacles nor running contrary thereto.

There are successive characteristics which we may readily recognize in the early action of the mind. As soon as the organs of sense are in working order, as soon as the eye distinctly sees, as soon as sounds can be recognized, a process of collecting facts is commenced. These facts are at first of the most homely kind, but the sphere from which they are gathered is extended by degrees. This collecting of facts is an operation which, with more or less activity, continues through life; not, however, with equal energy in different persons—for some are much more observant than others—nor with equal energy in the same person at different periods of his life.

But very soon after this a second characteristic appears—the learning of the relationship of the facts thus acquired to one another. This, like the foregoing, is at first done in a very simple way, but, by degrees, with more accuracy, more precision. This stage has been sometimes spoken of as the dawn of the reasoning faculty.

A third characteristic of almost contemporaneous appearance may be remarked—it is the putting to use the facts that have been acquired and the relationships that have been determined. An infant very soon learns that it can gratify its desires; it very soon manifests its likes and dislikes. Its brief experience has taught it that its feeble cry of distress, evoked it may be by some transient suffering, at once exacts attention. It soon learns to compel obedience to its wishes by resorting to the same operation in a louder strain. Moralists say that man in his infancy is the most helpless of all creatures; that he has neither weapons of offence nor of defence; that he depends on the watchfulness and care of those around him. But in this moralists are very much mistaken. Of all infant animals man is by far the most powerful. His cry is a master weapon. With it he can break down the resistance of his parents; and, if loud enough, he can compel the stranger to give attention, if long enough he can secure his own ends. He soon learns what use can be made of his voice.

Now, this triple natural process—this collecting of facts, this learning their relations to each other, this ascertaining the uses to which they can be put—must be the basis of any right system of instruction.

My answer to the question, what are the changes which ought to be made in our present modes of instruction is a short one.

Diminish the study of words, increase the study of things, the study of nature; instead of burdening the mind with abstractions let it be occupied in the collecting of facts.

While that is the object of the pupil, let us see what should be the course of the teacher. He ought never to forget that the first acquisition of language is by imitation. A child learns to speak not through rules, but by imitating the conversation of his parents. Let him continue his improvement in the same way. Falsely constructed sentences given him to correct, and the errors of his falsely constructed sentences pointed out, will do more for his improvement in his own language than years spent in the parrot-like repetition of the rules of grammar. Teach him to speak, and to compose as you teach him to write, not by disquisitions on the shape of the letters, but by setting him a copy.

Doubtless, many of us look back on the days of our earlier tuition with amusement and amazement. For myself, I was set to study Latin when only six years old, and, to add to the absurdity, was expected to learn it out of a grammar written in the Latin tongue. At eight I began Greek—that also in a book written in Latin—a language which as yet I did not altogether know. People talk now-a-days of such and such studies being a discipline to the mind—those were the days when that result was more certainly reached through a discipline of the body. The shortcomings and sins of each day were not expiated on the spot, but an account was carefully kept during the week, and the balance struck on Saturday morning—struck it was in a double sense, not only by the figures of delinquency added up, but also by the aid of a cane rattan which adjusted the whole account. I believe that this postponement of punishment was considered to be of excellent use as familiarizing the mind of youth with the doctrine of future rewards and punishments. It, however, only half performed that office. I saw little of the rewards and enjoyed less, but of the punishment I obtained a singularly critical and comprehensive knowledge. The schoolmaster of those days thought it to be his business to drive the nail of knowledge through his pupils head and clinch it with repeated blows of his rattan at the other end. That done, the youth was supposed to be ready for the career of life.

With respect to the collecting of facts, we exhaust, at a comparatively early period, the field which is under our personal observation, and additional supplies are for the most part gained from the experience of others, by reading. In later life, when our daily course is settled and we are running, as we say, over and over in

the same groove, this becomes more completely so. A certain period is thus reached in the development of the mind, when, if its natural course is to continue, the arts of reading and writing must be acquired, and also the elements of arithmetic. To local history—a brief sketch in simple language of the pupils own nation—may be added local geography, a similar description of his own country, to be followed by general geography, natural history, the account of plants and animals, the story of animated nature; with these might be given the beautiful art of drawing, an introduction to music, and somewhat later an outline of physiology, for a young person ought to have an idea of his own bodily structure, and the uses of its different parts. As the period of attendance on school is drawing to a close, to a study of arithmetic should be added that of geometry, and to the elementary literature of his own tongue, and to compositions of exercise in it, the modern or ancient languages.

The study of arithmetic and geometry presents solid advantages. In so far as you can discipline the mind these are of use. But not so with algebra. I can conceive of nothing more supremely absurd than the teaching of algebra to girls. Not that I would say a word in disparagement of analytical mathematics, of which algebra is the basis. I know too well the wonderful use that modern science makes of them; but the peculiarity of algebra, as every mathematician knows, consists in this, that the symbols save you the trouble of thinking. They are a cunningly devised contrivance to spare your reasoning powers, and in this they resemble those calculating machines now coming into such common use, in which if you put a peg here and turn a wheel there out jumps the answer to your problem. How much mental drill do you think there is in that?

But I must hasten my discourse. The time comes at length, when some sixteen years of age have been reached, for these general studies to close. They must be replaced by others of a more special kind. The young man must choose his business for life. His studies must have a proper relation to it.

Here our subject branches in many directions. It is impossible for us to deal with it now completely. In what remains to be said, I shall, therefore, restrict myself to such remarks as will be of more particular use to you, and shall suppose that the profession chosen has been the medical.

Even at this period of life and under these special circumstances, the principles that held good at the earliest period will still apply.

Our business is to collect facts, to find out their relations to each other, to see what use can be made of them. But how is a medical student to set about obtaining his collection of facts, which are to be, if you will let me use a base expression, his stock in trade? It is clear that under the circumstances he cannot do very much in the way of direct personal observation, and that his reliance must be mainly upon reading. In what direction, then, shall he look to find his supply! While the American student soon ascertains how great are his obligations to the medical literature of the language he speaks, he also soon finds that there is beyond that a vast additional supply contained in foreign tongues, especially in German and French. It is very true that the more imposing facts herein contained are quickly translated into English, but so vast is the body of this foreign literature that it can never be fully represented in that way. Perhaps then you will agree that it is not without reason I recommend a knowledge of those tongues, at least so far as the easy reading of the n goes. You have thus in possession the key that will unlock caskets full of the richest treasures.

Several of you have passed the years when the accomplishment of this task is possible, and have to content yourselves with what you can find in our own language. The treasures it contains are also very great, but I am sure you will perpetually feel regret that you have not been able to add to them the treasures of other tongues.

At eighteen years, if not sooner, the expectant medical student should obtain the instruction of some private physician, or, as the phrase goes, enter a doctor's office. There he lives in a medical atmosphere; there he gains general ideas of the daily routine practice of his profession. From the knowledge and experience of his instructor he adds greatly to his stock of facts.

On entering the medical college—and now I approach a point that is of present interest to you—he must bear in mind that principle which I have insisted upon as governing education from the beginning, that there is a proper order of succession in the topics to be learned. I have already indicated that there are things which can be learned by lectures better than in any other way, and it so happens that these are the fundamental subjects in the course of medical education. Among them are Chemistry, Anatomy, Physiology, *Materia Medica*. In no place save in the lecture-room can you acquire these sciences. You must have the experiments of Chemistry, the dissections of Anatomy, the demonstrations of Physiology, the specimens of *Materia Medica*; and in no place

save there can you find them. Nay, I will add, lest you should misinterpret what I said before, that in no other place can you obtain the *Principles* of the other three great topics—the practice of medicine, surgery, obstetrics. Completeness of information can be given on the four first-named subjects in the lecture-room, the dissecting-room, the laboratory. Incompleteness of information only can be given on the three last named by lectures. You must see the forms of disease in the hospital. No language can ever describe the countenance of a stranger so that you would recognize him in the street; no language can ever describe the varying aspects of a disease. You must see it for yourself.

But while I thus earnestly recommend to your sedulous attention hospital and clinical opportunities, it is my duty to caution you that you keep them in their proper place. They have their function, but that function is very far from covering the whole ground of medical education. They have, too, a seductiveness which is very apt to fascinate the young medical student. Their true use is to illustrate that vast body of principles on which the medical art rests, but the principles themselves they never can supply. The inexperienced student is introduced to a great hospital, such as we have here in New York; he ranges through the wards, sees what is to be seen, witnesses operations, hears the opinions and advice of the physicians and surgeons. But when all that has been done, what does he know? He may have qualified himself to practice routine on the little scale, to do what in a few instances he has seen done; but to him the volume of medical science is still a closed book. He may know something of the views of the doctor he has been following, but he knows nothing of the experience, the wisdom of the whole profession, accumulated in a lapse of ages.

In the course of my life I have examined several thousand students for the medical degree, and among the signal failures there is one which remains on my memory. It was the case of a very conscientious and industrious young man. He told me how many great surgical operations he had witnessed, how many obstetric cases he had aided in, what multitudes of diseases he had seen in the dispensaries and hospitals. He had never lost a day in his attendance on these opportunities. but, he added, "I have absented myself much from the college." Of anatomy, of chemistry, of physiology, of materia medica he knew absolutely nothing. When I frankly told him of his deficiencies—in fact, they had become only too obvious to himself—he turned pale and said, expressively: "Ah! I have been running after the shews of medicine, and have neglected its substance."

I was conversing with that great surgeon, my colleague, Dr. Mott, a short time before his death, and he, recalling this particular case, remarked that he sometimes thought the plan of instruction we pursued was defective. "I sometimes think," he said, "that, if I had my will, I would not let a student avail himself of these hospital privileges until he had finished his first course, and mastered the principles of the science. Then he might spend all the following summer and as much of the next winter as he could with better advantage to himself." But he added, "I don't know whether we could bring about such a change."

I have said this much with no design of discouraging you from availing yourselves of all the practical advantages that are presented to you. We have built this new edifice in the vicinity of this large hospital that you might have a better opportunity of visiting it. Surely that is encouragement enough. But let us not encourage you too much. Let us remind you that there is a course of study proper for you to pursue, and for each thing a proper time. We live in an age when too many deride what they term the theoretical, and praise what they term the practical. Let us not forget that the thing we require is not that we should have another to think for us but that we should think for ourselves. He who is guided exclusively by the practical is a servile imitator of somebody else; he who is the master of principles, which are bound up in theory, can think independently.

After the session we now open is over, many of you will graduate and enter on the active duties of professional life. Your friends may, perhaps, say that you have completed your studies; do not believe their kind flatteries. What is known in medicine is vast in its extent, but who can measure what is unknown. As the sphere of light extends the sphere of darkness that surrounds it becomes greater and greater; yet on that darkness we are perpetually encroaching. As long as you live, even though you attained to locks of silver, you will be nothing but students yearly becoming more and more conscious of your own ignorance, your own superficiality.

In America it is the lot of young men to abandon too early their college connection and go forth to deal with the affairs of active life. From this comes much of that superficiality which, it is said, affects all our learning. In all parts of our country there are rich men who found new colleges, rich men who endow professorships, rich men who create schools of art. In many respects their benevolence is misapplied. Of colleges we have more than enough; of

professorships we have plenty; but the thing that is really wanted no one has yet touched—encouragement for the continuance of study. What a change would at once take place in our science and literature, how quickly would the stigma of superficiality be removed if, after the manner of fellowships in English universities, provision were made for the support of young men who had distinguished themselves by their ability in college life, and who were disposed to devote themselves to the cultivation of some special study. Let us recollect that it was under such circumstances that the grandest work which the human intellect has yet produced—the theory of universal gravitation as set forth in the “Principia” of Newton was written. The native country of that great philosopher, submitting to the destiny that sways empires, may lose its political power; the emblems, nay, even the vestiges of its dominion may pass away, but that monument of its intellect will survive. All over the world people of every language and of every nationality will give their assent to the words which are engraven on that great author’s tomb: “Let the human race be glad that such a man was ever born.”

Now we are ready to enter upon our winter’s work in this new and beautiful edifice, for which we are indebted to the capital and exertions of Mr. Courtland Palmer. A love of learning and desire to promote the cultivation and diffusion of medical science have led him to spare no pains in making this building at once commodious, elegant, well-fitted for our use. It has its lecture-rooms, dissecting-rooms, chemical laboratory—everything that can be desired. In these the Faculty will labor to lay before you those cardinal principles of which I have said so much. For the practical there is one great hospital across the street, and on the river islands others close by. To all of these there is access for you. The theoretical and practical are both before you, and all that remains is for you to go on with your studies with all your heart.

May this building, which we to-night inaugurate, long continue a bright focus of medical learning; from it may there be given to our profession many an addition to the stock of science; from its doors may there go forth many generations of educated physicians to relieve human suffering and to bless our land.

