Pease (R. W.)

ADDRESS

TO THE

GRADUATES

OF THE

College of Physicians & Surgeons

OF THE

SYRACUSE UNIVERSITY,

DELIVERED FEBRUARY 12TH, 1873,

By R. W. PEASE, M. D.,

PROFESSOR OF CLINICAL SURGERY.

Published by Request of the Class.

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College of Physicians and Surgeons,)

Syracuse, Feb. 13th, 1873.)

Prof. R. W. PEASE, M. D.:

Dear Sir:—Your Valedictory Address of last evening was listened to with such profound interest, and it was so replete with facts and suggestions, so valuable to the Medical man, that the class are very solicitous that you will consent to its publication. By complying with this request, you will not only confer a great favor upon the class, but upon the profession at large.

Very Respectfully, Yours,

GEO. P. REYNOLDS,
JOHN S. NILES,
H. J. BUCKINGHAM,
Committee for the Class.

Syracuse, February 16th, 1873.

Gentlemen:—It gives me pleasure to acknowledge the receipt of your note, and to signify my compliance with your request for a copy for publication of my Address, given to the Graduating Class of the College of Physicians and Surgeons, on the 13th inst:

I am, gentlemen, with great regard,

Your Friend,

R. W. PEASE.

Geo. P. Reynolds, John S. Niles, H. G. Buckingham, Committee for the Class.

ADDRESS.

GENTLEMEN:—The course of study prescribed by law and custom, as the first requirement for entrance to the ranks of the medical profession—the examination requisite before Faculty and censors to test the individual faithfulness with which that course has been pursued, as well as the proficiency acquired in the principles of the different departments of the study of our art, prerequisites to the attainment of the degree of Doctor of Medicine, having been successfully passed by each of you, it remains for me to welcome you among us now, as co-workers in the wide field of medical research and labor, and to offer such hints as may assist in the work in which you are about to engage.

Perhaps the time assigned me cannot be more profitably occupied than in trying to show how by individual effort, great and important discoveries in art and science, have resulted, and bringing home the lesson to each of us that we must be not only toilers but contributors in this vast field of effort.

A few months since I stepped on board an ocean steamer lying in the harbor of Boston. She was a splendid craft; her lines struck against the horizon as she lay quietly on the water with a harmony and beauty that would have

arrested the attention of the meanest observer. Every spar, sail and rope, was arranged with mathematical precision We sailed out of that quiet harbor upon the treacherous Atlantic where wind and storm awaited us. Against the iron sides of our ship, Titan waves dashed themselves; on their crests we tossed about; through her rigging howled the winds, making in their passage a sound more mournful and terrifying than anything we hear on land; but, deep under the water, pulsated our engine, and steadily and safely, without cessation revolved the fan that irresistably impelled us toward our destination. None of us who made that winter passage can ever cease wondering at the possibility of so building a vessel that she can outride such tempests.

But the ship that carried us so safely was the product of twenty centuries. She could not have been possible to-day were it not for the men of yesterday, and of all the days before yesterday.

Every bolt and brace, every spike, spar and sail, even every line and angle in her form and shape has vexed ten thousand brains, until the product is that marvel of human skill—the modern steamship.

So of every art and science that marks the civilization of to-day. Each is the product of a thousand hands.

The history of Astronomy shows us that 2,000 years before Copernicus, the Egyptians had taught essentially the same doctrines, and had transmitted them to Pythagoras who taught them to his countrymen. Again the hypothesis of Copernicus, the central position of the sun, and the revolution of the earth and planets around their centre, impelled Keplar to that series of magnificent calculations which led to the discovery of the true nature of the planetary orbits and fixed the curve that explained the orbital motions of the celestial bodies.

Justly has this great philosopher been styled the "Legislator of the Heavens." Indeed the student can have no higher model for imitation held before him, no biography can be read with greater profit than that of the great German philosopher; and the exalted language in which he expresses his joy at the result of seventeen years of unremitting toil over the problems which were to effect so great a revolution in astronomical science, are the words of all great workers whose labors are rewarded by discoveries which benefit the race, as he exclaims, in the excitement of his glorious triumph: "Nothing holds me—I will indulge my sacred fury! If you forgive me, I rejoice; if you are angry, I can bear it. The die is cast. The book is written, to be read either now or by posterity—I care not which. It may wait a century for a reader, since God has waited six thousand years for an observer!"

But Kepler has only announced the eliptical motion of the planets, the law of which—these are but illustrations—is yet to be sought. Other minds are necessary. Galileo takes a step towards this in his investigation of falling bodies.

From observation, he had been led to doubt the Aristotelian theory, in which it was affirmed that the velocity acquired was in direct proportion to their weights. In the presence of the universities and multitudes of interested spectators, the test of experiment was applied to this principle at the leaning tower of Pisa, where the young philosopher demonstrated its falsity by taking to the top of the tower, balls, one just double the weight of the other, and dropping them from the lofty height at the same moment—swift descending—they strike the earth at the same instant. Again and again is the experiment repeated, with uniform result. Thus was overthrown a theory which, for centuries had held its place among the learned, and, from investigation that followed, was developed the law of falling

bodies expressed in the proposition that the spaces described are proportional to the squares of the times; also the elucidation and pronunciation of the laws of descending, flying or moving bodies, to whose imperious sway the rifle shot, the cannon ball, or the circling planet are alike obedient.

Thus, by Keplar and Galileo, was the way prepared for the further discoveries of the matchless intellect of Newton, who takes up and works out the unfinished task. So is it pre-eminently true that, in the world of science, no man lives to himself alone.

It is a subject of singular interest to the student to note how the lines of scientific study converge, each tending to develop some grand fact common to every department of science.

For instance, the spectroscopist, by the thread of light transmitted from the remotest star, ascends to that distant orb as by a ladder, and gives you the chemical constitution and the physical condition of these immeasurably distant worlds. "Newton's law of gravitation," as expressed by Schellen, "gave us the means of calculating the courses of the heavenly bodies, of projecting the orbits of the earth, the planets and comets, and of predicting their relative position in these orbits." But this same law of gravitation chains man to the earth and forbids him to leave it. Yet by the spectroscope have we demonstrated that this glorious universe, with all the globes that swim in space, is indeed a *unit*, and if we, inhabitants of this planet, possess our gold, magnesium, silver, lead and iron, there is found in the furthest star that twinkles in the firmament, the same materials that enter into the physical and chemical constitution of our own world.

In our own art the same law of evolution or development holds good. In the same order of progression have we attained to the present advanced stand-point in medicine.

Here, as in all other sciences, it is impossible to break the link that connects us with the old observers. Hippocrates

marked a period four hundred years before Christ. Galen flourished in the year 130. In the writings of both many important anatomical facts had been shadowed. Indeed, Galen, by the dissection of apes and other animals, had contributed much to the stock of anatomical knowledge. But to Vesalius, who was born in 1514, are we indebted for laying the foundation for the successful and scientific prosecution of medical investigation, by the dissection of the human body, of which he was the first to give a complete description. His designs, plates and illustrations were so artistic as to be ascribed to the great painter Titian. Others had partially dissected the cadaver, but he, with the enthusiasm of genius and of inspiration, pursued his investigations through charnel houses and prisons, about battle-fields and remote graveyards—"wherever an abandoned mouldering human body could be found;" running the risk of ignominious punishment, suffering from the secret stings of superstitious remorse, regardless of the poison that lurked in the fiber of the dead, working ever until he accomplished the great work that has placed him high on the roll of fame.

Galileo in the clear crisp air of an Italian autumn night, swept the heavens with a telescope he had devised, breathing in health and vigor while mapping out the new worlds brought to view. Vesalius descended to the dungeon of the plague stricken criminal, and by the dim light of his taper, amid the noxious exhalations of the cell, with scalpel laid bare the secrets that had, for thousands of years, eluded the observation of the most diligent searchers.

There hangs in one of the Florentine galleries, so rich in the art treasures of Italy, a picture of this wonderful man, representing him alone with the dead—with matchless and unwearied patience seeking into the hidden mysteries of life, and solving its most profound secrets. Fear not that you will honor too much one who was ordained for this

mighty work, but may your hearts and lives be animated by the same fire of devotion, making you worthy successors of this illustrious investigator, who counted no labor too severe —no sacrifice too great—if they yielded aught to the great problem to which his life was pledged. Like him be not satisfied with present attainments. The portals are wide open, and the stately edifice of the wisdom of all ages is yours to explore.

A century elapsed from the grand achievements of Vesalius before the crowning discovery of the circulation of the blood by Harvey. But large and important as has been the advance of medical science in each succeeding year, the next great period is that which is distinguished by the investigations of Shultz, Wagner, Valentine, Schwan, and Schleiden in their histological researches. They have given us, by the microscope, results as brilliant and far reaching as are those of Bunsen and Kirchoff with the spectroscope.

Schleiden and Schwan, simultaneously engaged in studies, the former upon vegetable, the latter upon animal tissues. The gentleman first named, with Valentine, hinted at the doctrine of cells as the basis of all organic forms. But Schleiden first enunciated in clear and definite terms, the formation of cells in vegetable structure, according to a single and uniform method. Schwan seized the thought, applied it to animal tissues, and, by the adoption of the nucleated cell as the elementary form, formulated the law of the *unity* of *plan*, in vegetable and animal reproductions and growth. It is hardly possible to speak in too emphatic language of the vast advance in pysiological science and pathological histology as the result of the investigations of these patient workers. Following closely upon the researches of Schwan and Valentine and others, Virchow has given the results of his studies to the medical world "and now the doctrine of cellular pathology is universally regarded as the basis from which all morbid manifestations

must be studied." Through the enunciation of these laws are we approaching an exact science in medicine. The dogmas of theorists are giving place to the facts of science. Never has the work of investigation been pursued with more vigor than to-day. The stimulus for minute research has carried mechanical and optical appliances to the last degree of refinement. Our young men are acquiring a tact and education, together with a skill in manipulation which assists in pushing observation to its extreme limit. And now to the microscope has come the aid of photography. Comparatively few have the time or skill to use the microscope. But by photography can his labors be so popularized as to bring them to the eye of every student. Indeed the image produced is, in many respects, superior to that which direct microscopic observation reveals. In the words of Dr. Vanderpool, "Hereafter tissue or structure shall be its own delineator. No imperfect description, no vivid imagination, no overwrought theory shall affect the truth of representation. It is a wonderful triumph of art. Tissues requiring the magnifying power of one thousand diameters, are presented of any size, with all the distinctness and vividness of outline which the most skillful and delicate manifestations can give to the eye of the observer."

It is flattering to our national pride to know that photographing by artificial lights, either magnesium, electric or oxy-calcium, under great magnifying power, of microscopic objects, was first performed by Dr. J. J. Woodward of the United States army. By this process has been given to the profession, through the Surgeon General's office, the results of microscopic observations which, were it not for this discovery, must have been cognizable to but comparatively few.

Thus does art lend to science a powerfully helping arm—and these together—with the skillful hand, the seeing eye,

and ever advancing and progressive thought, are the open sesames to all the mysteries of the universe.

We have but touched the great periods that have marked new starting points in our profession. Immense has been the progress since Vesalius laid, broad and firm, the foundation in the proper study of anatomy. The stimulus to investigation commencing at this period, has resulted in the wonderful discoveries that have conferred such lasting benefit on the race. We can but briefly allude to them.

The introduction of vaccination by Jenner; the discovery of anesthetics by Morton and Wells, as well as the helps given us in diagnosis by the introduction of the stethescope, laryngoscope and opthalmoscope. In surgery the bold operation of ovariotomy, first performed by an American—Dr. McDowell, of Kentucky, in 1809—and now practiced over the civilized world, relieving fully eighty per cent. of the victims of the disease from certain death. Also the operation for vesico-vaginal fistula, devised by Dr. Sim, of New York, by which is rescued from worse than death, the subjects of an accident to which our mothers are liable in the trying hour of maternity.

For these benefactors of the race, where can we find gold pure enough or marble white enough, to commemorate the benificent discoveries they have bequeathed to the world?

Nothing I can mention, perhaps, will better illustrate the great advance in our art, than the improvement in the last half century in the treatment of the insane. But little more than twenty-five years ago, the following is a description of how a lunatic was treated in one of the best asylums of England—and that asylum was a type of all such hospitals:

"A stout iron ring was riveted round his neck, from which a short chain passed to a ring made to slide up and down on an upright, massive iron bar, more than six feet high, inserted in the wall. Round his body a strong iron band, about two inches wide, was riveted. On each side of

the bar was a circular projection, which being fastened to and enclosing each of his arms, pinioned them to his body. Thus fixed, like a crow on a wall, this poor creature was enforced to wear out his existence of more than twenty years."

By a more intelligent appreciation of the physical cause of mental disease, these horrors of treatment have been swept away, while kindness and gentleness have softened restraint, and many victims of mental maladies have been rescued, or their pathway smoothed to the end.

Here permit me to speak of one of the noble outgrowths of our profession in the inauguration of means for the physical and mental development of idiots. The most eminent pioneer in this work has long been one of our honored citizens, and is recognized throughout the country as an accomplished educator in the broadest and best sense. The imposing structure crowning one of the sightly hills of our city, dedicated to the noble work to which I have alluded, stands, as to management and discipline, a model of its kind for all countries. I need not say to you gentlemen, that the superintendent of this institution fills, in this college, the chair of Diseases of the Mind and Nervous System. He has not only given celebrity to this chair, but has been of service in giving shape and form to the new system of medical education adopted by this department of the University.

Time does not permit to even advert to the various and multiform works of charity under the special supervision of the profession, nor to the sanitary fields of labor which engage the thought and active interest of the best minds in our ranks.

It is a grand period to the young man just entering the profession, animated by the thought that, although he has ceased to be the medical student, he has become the student of medicine, and that while he may appropriate the

labors of those who have preceded him, he may and can, for the opportunity is abundant, contribute something to the stock of knowledge that shall not only enrich his profession, but also multiply his own powers for usefulness in his calling. About the best any of our colleges can do is to teach their pupils how to learn—to give them methods of study, and assist them in the gathering of facts and thoughts that shall start them on the way. Only those who adopt the maxim, that education is never completed, can do brave and beautiful service in our ranks. I believe it is the ambition of this class to obtain all the knowledge and skill that lies open to them. To do this requires a degree of courage and patience you cannot yet fully comprehend.

Every day that passes calls for a higher standard of education; a call not from the profession alone, but from the community also.

The title of Doctor has been a very cheap thing. And yet, common as the title has become, the time has never been,—and it is more true to-day than ever,—when the educated, conscientious physician has not been welcomed as the peer of the best.

In the supremest hour of peril that comes to our loved ones; in that dreadful period of maternity; in that moment of accident, when the pride of the home is brought to the door with his life blood fast ebbing;—then no charlatan is wanted—the skillful physician, the ready, alert, and keen eyed surgeon is summoned. This is the hour of the triumph of education and skill.

Young men if you have not prepared yourselves for such emergencies as these, or if for such times of trial you are satisfied with what you have accomplished, then in all soberness I say, roll up your parchments, seek some other avocation where human life is not involved; or so truly as you leave these walls and follow this calling, you will be not only witnesses, but actors in the scene.

But I must not omit to say a word in behalf of a wider culture than mere medical education. I would emphasize the fact that you go from this University as representatives of a learned profession. It is presupposed that a graduate of medicine is at least versed in the principles of the natural sciences—that he has more or less knowledge of Greek and Latin; and the necessities of to-day absolutely require an acquaintance with one or more of the modern languages. To the medical student familiarity with the classics is invaluable, as the nomenclature of our profession is derived from them, and it will be of vast service to the graduate to keep himself bright in these languages by daily reference to them. But if their cultivation has been neglected, lose no time in commencing their study and continue it diligently until a fair knowledge of them is acquired. And I would likewise recommend the early acquisition of either the German or French tongue, as the literature of medicine and surgery is enriched from these sources immeasurably.

But it is from the cultivation of the natural sciences, that the best discipline for the medical man can be derived. The study of Botany is so important to the practitioner and so fascinating to the student, I need hardly say anything to increase your interest in it. But I would especially call your attention to the great advantages flowing from a careful and diligent study of Geology. Perhaps no investigations so quicken the powers of observation as the cultivation of this science. Truly the geologist finds "sermons in stones, and good in everything." It is to the *physical* what history is to the *political* world. By and through it we are brought at each step into more intimate knowledge of the grand planet we inhabit. In Tennyson's "In Memoriam" is sung one of its lessons:—

> "There rolls the deep where grew the tree,
> O Earth, what changes thou has seen!
> There where the long street roars, hath been
> The stillness of the central sea.

The hills are shadows, and they flow
From form to form and nothing stands,
They melt like mist the solid lands,
Like clouds they shape themselves and go."

A distinguished teacher of medicine, Dr. E. M. Moore, has remarked that in the whole range of his acquaintance with those thoroughly versed in the sciences, he has never met with one who has embraced the dogma of Hannemann. Many cultivated and excellent people have adopted the theories of this dreamer, but they are not found among the scientists.

But, gentlemen, I must close. If it were possible I would express to you the earnest interest those who have directed your studies for the past few months have in your individual welfare; in the success that may crown your endeavors; in the good of which you may be the almoners; in the renown you may confer on the University from whence you go. Your future depends upon how you shape your habits of study and character.

When the statue of Theseus was taken down, which had for years fronted the beholder from its giddy height above the Parthenon at Athens, it was found that the back of the statue, on which none had looked for ages, was the perfection of the sculptor's art. Eye of man would never see it, but the temple was built for the gods and the unseen eyes would behold.

"In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part;
For the Gods see everywhere.

Let us do our work as well,
Both the unseen and the seen;
Make the house where Gods may dwell,
Beautiful, entire and clean.

Build to-day, then, strong and sure,
With a firm and ample base;
And ascending and secure
Shall to-morrow find its place."