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ADDRESS.

THE PHYSICIAN IN PRACTICE.

Annual address to the graduating class.

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Gentlemen of the graduating class:—You stand at the gateway of futurity. What it may hold for you depends upon yourselves and the use you make and have made of your opportunities. In the vista of life there stand out a few bright spots; here and there an isolated eminence rises above the common level. There are events in life that mark epochs for the individual. Such is this occasion for each of you. Tonight, at the same moment, closes and opens a chapter. This is an hour fraught with deepest significance. You have arrived at this moment, so long anticipated, only by years of diligent study, by long hours in the lecture room, the laboratory and the clinic, and by much burning of the midnight oil. Only by unremitting pursuit of a determined purpose and a definite choice, have you reached the cherished goal. Choice determines destiny, upon the underlying purposes of our lives depend our choices.

In the elevation of our ideals must ever rest the character of our achievement. Prompted by what diverse motives and with what ends in view, you entered upon the study of medicine *you* only know. It is trusted that realizing its grave responsibilities, recognizing its unequalled opportunities for helpfulness and appreciating its necessities for self-sacrifice beyond that of any other calling, you have entered upon it solely from the standpoint of unselfish service. For, "the physician's first duty is to his patient; his second only, to himself, and the physician who reverses it is a quack." No other profession demands so much of preparation, and compels so rigorous and extended a course of training as does the study of medicine, and rightly so. That this is true you are fully aware. Your sensations are very much like those of the small boy who has partaken of too much Christmas plum pudding. You feel stuffed to every atom of your being with the fundamentals of the science and art of healing, gathered from every department of the limitless field of medical lore. Every intracranial fossa is crowded. Every convolution and gray cell is teeming with yet unassorted and unassimilated knowledge. Full as you have drunken you have scarcely tasted the swelling stream of learning. All it has been possible to give you has been simply a beginning. The door of knowledge has only been opened. You have been led but a few halting steps on the rugged and endless path along which you must henceforth climb alone. To what pinnacle do you aspire, what impress will you leave upon the

dawning century? Remember that "the demand for something better than that which now exists never ceases." Fields for discovery and research lie fallow before you, and there is a place in the temple of fame for him who will.

"In that fair niche by countless billows laved,
Trace the deep lines by Sydenham engraved,
On yon broad front, that breasts the changing swell,
Mark where the ponderous sledge of Hunter fell;
By that square buttress mark where Louis stands
The stone yet warm from his uplifted hands."

It may not be given to any of you to find a place in that charmed circle of immortals whose work stands as the stepping stones by which medical science has mounted to its present exalted place. The world has never known the names of many of the truest heroes and noblest martyrs who have humbly, in obscure byways of life, followed the daily round of their engrossing duties, unheeding as unheeded by the outer world, "doing what they could do well, without a thought of fame." What powers you may possess no one knows. If you have the capacity for work, for ceaseless and untiring effort, there is nothing to which you may not aspire. Many of the men whose names lend greatest luster to the profession achieved their place in the face of the most untoward circumstance, by sheer force of merit. The same way is open to you.

If in your brief course of training, severe and thorough as it has been, you have learned to love study; if you have acquired a true thirst for knowledge and the search for truth for its own sake, and beyond that for the great uses to which you may devote it in the interest of suffering and afflicted humanity, your instruction has fulfilled its highest mission and your future is assured. It is not the simple knowledge that you have actually gained that is of chief value to you, but the habit of application, the power of selection and analysis, the mental training. Much as you know there is still much for you to learn. Things that can not be taught in any school make up the determining balance for each learner in the school of life; a knowledge of one's self and his limitations, the maturing of judgment and self control, the appreciation of how limited and how circumscribed is all our knowledge, even at its widest and its best. To recognize how little we know is the surest symptom of improvement, for while

"Knowledge is proud that he has learned so much,
Wisdom is humble that he knows no more."

Incompetence is a more fatal fault in medicine than anywhere else. There is no place here for weak hearts or feeble, untrained intellects. All the liberal professions are much overstocked. The number of graduates in medicine annually greatly exceeds the demand. Too many good clerks and mechanics are yearly turned into poor doctors. Hardly one practitioner in forty attains to anything of eminence or success. There is place only for men of the first

ability and the highest training, men who are ready to battle against all odds, capable of ceaseless application and the devotion of a lifetime.

The standard of requirement in medical education has made rapid strides in this country in the recent past. But a few years since, only two brief sessions of five months were required for graduation; while every reputable school at present demands four full years of study. The greatest defect now is the low standard of preliminary training requisite for entrance on medical study. Many men of far too little general education enter all our medical schools, either to be stranded by the way or to be graduated utterly unfit to practice, a menace to the public and a disgrace to the profession. Until this is remedied dangerous men will still be turned loose to practice on unsuspecting victims. And it will not be remedied till institutions of medical learning are placed on a plane above self-seeking motives and the need of students' fees for maintenance. It is a most gratifying indication that every advance in grade made by a medical school has been followed by increased attendance, and always by men of higher attainments. Harvard and Johns Hopkins have taken the highest stand, having recently declared a college degree necessary for entrance. Hasten the day when the Medical Department of Hamline University shall follow this illustrious example. The proportion of college bred men in the various schools of the country varies from 3 to 43 per cent. To the credit of this class be it said that one-half of your number hold previous degrees.

In the minds of many, a diploma is a passport to social position and professional success. But you will find it no touchstone of entrance to the inner courts of preferment. You must stand or fall on your own merit. You are going out to face not an inviting but a frowning world. The universe has not been waiting your coming. You must make your own place in it. Do not expect success too soon. There is long and tedious waiting before you, and it is well, although in it there are both dangers and advantages. Many, becoming discouraged and disheartened by the long delay, lose ambition, give up the unequal struggle and drift into the first opening that offers a livelihood. But if you are made of the right stuff and stick where you start, with worthy determination, employing the waiting time in earnest study, and unassuming diligent effort, the reward will surely come, but only when you have demonstrated your intention not to succumb. One young physician, starving in Liverpool, had not a single patient in three years, and another, locating on a leading London street, received one call in seven years. Do not expect recognition from rival fellow practitioners until your rising reputation compels it. You will not find all brotherly love and harmony in the profession. You will meet opposition where you least expect it. You will receive merciless criticism and slurs where you might anticipate favor. The discreditable bickerings that disgrace the profession are born of petty jealousies and are utterly beneath its dignity. Always be ready to give full credit to merit, even in your rival. You will never suffer by it. If you can not speak well of him, say nothing. You can not build yourself up by pulling another down, and you only damage your own when you assail another's reputation. Yet do not hope to avoid creating enmities, but so far as possible, and consistent with self respect, avoid creating needless opposition. Many a young

physician prejudices and handicaps his whole future by injudicious and obnoxious aggressiveness, born of immoderate egotism. Quiet attention to your own affairs will build surely and broadly for ultimate success. In all your conduct, both toward your fellow practitioners and the public, may you be imbued with a standard of medical ethics irreproachable from the most elevated professional standpoint, resisting with uncompromising opposition the growing tendency to its disregard which threatens to degrade the noblest of callings to a commercial basis and a huckstering trade, and so to remove the sharp line of demarcation between the reputable physician and the unprincipled charlatan.

Your ultimate success will depend upon many other things as well as upon your training and ability. Personality counts for very much in winning your way, a pleasing presence is a most fortunate possession. There are doctors whose daily visit to the sick room is a better tonic than any medicine, and it is said of an eminent Boston physician that his smile was worth \$5000 a year to him. While we can not remodel the endowments with which nature has favored us, we still can do much in the cultivation of pleasing manners. It is as easy to be affable as to be curt. It costs no more to be a gentleman than a boor. Your habits of life will be of the utmost importance both to yourselves and to your patients, and most important of all is the habit of temperance. In no other walk in life can a man afford so little to indulge in dissipation, and yet every community has its wrecks of brilliant and able practitioners who have swamped all in the glass. A mind befogged, reeling and dizzy with alcohol is in no fit condition to think clearly, to act with prompt decision and certainty in those great emergencies which come to every physician, when a human life is in the balance and to err is fatal. "Intemperance in a physician," says Dr. Holmes, "partakes of the guilt of homicide." Self control is an absolute essential. The greater the emergency, the calmer and clearer must be your thought; ready to act on the moment, yet always with full deliberation. Never be in a hurry, it unsettles your nervous equilibrium and vitiates your judgment. Remember the story of the young doctor who received his first call while in the midst of a shave. Scrubbing the lather from his half shaven face, he started on his mission, burst into the sick-room in breathless haste with the anxious inquiry, "How long have you been sick?" "Twenty years," calmly replied the invalid—ample time to have completed his toilet.

Always respond to calls promptly and without unnecessary delay. Moments seem hours to anxious friends, and evident neglect is not easily forgotten. Be prompt in all your appointments. An hour's wait in anxious anticipation, beyond the time of your expected visit reacts unfavorably both for yourself and your patient. Be considerate and kindly in all your surroundings. Be sympathetic, genuinely, truly, deeply sympathetic. A physician without sympathy is a misnomer, and is never the truest success. You must be versatile, resourceful, self-reliant, "ready to show a new front as often as the situation shows a new peril." Attention to the insignificant details will prove of more importance in your success and your results than the master strokes of medication. The little things that concern the ease and comfort of the patient outweigh your more pretentious treatment. Be very careful in your selection of remedies,

study each case to its last symptom. Keep all its possible contingencies constantly in mind, that you may be ready to meet promptly any change, and not be taken unaware by a flank movement of the enemy. There is no occasion for dealing in mysterious and meaningless terms. A frank, clear statement is due the patient or his friends. Yet beware how you take away hope. Your opinions must be given with caution and with tact. If you can not command the entire confidence of the patient withdraw from the case at once, for you can accomplish little without it. Always be open to conviction, but do not hope to avoid mistakes for they are inevitable. You can never conscientiously keep a patient for a moment when you know he can get better help elsewhere and when you do, you become a pirate and a brigand; the robber on the highway is less guilty. In all your advice and counsel, especially surgical, put yourself in the subject's place and recommend for him only what you would have for yourself, your sister or your mother. There can be nothing but condemnation for that too common spirit that operates only for the zeal of operating or the added pecuniary returns, a stain from which surgery, both special and general, is not altogether free. You are to perform, or to recommend, surgical or other procedure, only when the welfare of the patient demands it.

The conduct of the medical life is filled with advantages and opportunities of growth shared by no vocation to the same degree. It will develop your judgment, broaden your sympathies, make you more charitable in your estimate of motives; and while it shows you at times, human nature at its worst and its lowest, and many things will cross your path that will tend to shake all your faith in humanity, you will, on the other hand be let into the secret chamber of heroic suffering, and have glimpses of nobility and grandeur of character that will flood and tinge all life with its beauty and before which we bow in reverent homage. It will make you shrewd and discerning. No one can look through the hearts of men and read their lives in their faces as can the experienced physician. No one knows human nature so well. In no other walk in life are there such privileges for helpfulness, to speak a word of comfort in time of trouble and loss, to pour balm into aching hearts, to lead up to aspiration when all is despair. "There are times when the physician has power for good or evil exceeding that of any other man, when the mind of the patient is filled with forebodings, when the past is dark and the future without hope, he is more ready to listen and be influenced than at any other time." The secrets of the inmost life, sacredly guarded from the world, are revealed and laid freely before you. Those confidences must be held as absolutely inviolable. You are to enter your patient's house only to do him good and in all your conduct to avoid the very appearance of evil. It is a matter of wonder that comparatively so few men of high ideals of life and true Christian spirit are attracted to the study of medicine, and the catalogue requirement of high moral character in the candidate for a degree is worth no more than the paper it is printed on. The medical profession should be open to, and entered upon, only by men of the highest character, the most gifted nature and the noblest soul.

To attain any measure of success you must have the confidence of the community. To gain and hold this you must merit it. Govern your conduct by dignity, honor and becoming modesty. Your waiting

time, through which all must pass, may be spent to better advantage in reading and study than in exchanging stories with the loafers at the corner grocery. You must be constantly investigating and advancing. The universal tendency is to stagnate and rust. Set no limit to your ambition. No possibility is beyond you. Never rest content with any vantage gained. Press steadily, untiringly on.

"Still achieving, still pursuing,
Learn to labor and to wait."

The life of the physician is peculiarly trying and his duties most exacting. He has no moment that he can call his own, night or day. Everything must give place to the call of duty. The strain, the exposure and fatigue are extreme. Endurance is taxed to the utmost. Utterly forgetful of self, he is beautifully and ruggedly drawn by MacLaren in the character of Weelum MacLure of Drumtochty who "did his best for every man, woman and child, year in, year out, in the snow and in the heat, in the dark and in the light, without rest and without holiday." Often the greatest sacrifice is a thankless task and goes without reward. For although there is nothing a man will not do to regain lost health, there is no obligation he is so slow to discharge as his physician's just due. The returns of medical practice are disproportionately small. The true physician, generous, charitable, benevolent, gives little thought to his fees and has educated the public to do the same. His chief concern is for the welfare of his patient, and he is too forgetful of himself. The financially successful practitioner, in a large way, is usually only a self-calculating business man, concerned first for his fees, and secondly, if at all, for his patient. He is rarely a sympathetic, great-hearted, broad and genuine physician.

Your responsibilities and obligations do not end with your purely medical work. You come in closest touch with the great heart of the world. You will know its trials, its shortcomings and its virtues most intimately. The family physician occupies a position entirely unique and shared by no one else. You may be the greatest possible power in society for moral conservation. You are in a position to act and speak with influence as no one else can. You can warn, and guard and encourage with the voice of counsel and authority. So, helping and helpful, devoting yourselves to the good of humanity, family adviser and friend, living beyond your time in lives elevated and made better by your walk among them, shall the evening of life be serene, though hastened by exposure and stress and devotion to its duties, risks and dangers, receive the same loving homage that was the part of that gnarled old hero of Glen Urtach.

Canon Liddon has thus beautifully, and we trust truly eulogized medicine: "The profession of medicine is from its nature, I had almost dared to say from the necessity of the case, a teacher of benevolence. Often we have witnessed the transformation, one of the most beautiful and striking to be seen in life, by which the medical student becomes the medical practitioner. We have known a medical student reckless, selfish, or worse and presently behold him a medical practitioner, more unselfish and devoted than any other member of society. What is this something, akin to ministerial ordination, which has brought such an inspiration of tenderness and sympathy. The answer apparently is, he approaches human suffering from a different point of view. As a student he looked upon it as something to be observed, discussed, analyzed, anyhow lectured

upon, anyhow examined in. As a practitioner he is absorbed by the idea that it is something to be relieved. This new point of view, so profoundly Christian, will take possession of a man's whole moral nature and give it a totally new direction. Thus the medical practitioner is at once the master and teacher of the purest benevolence. This is true of those great lights of the profession whose names are household words. But it is even more true of many practitioners of whom the public takes no note, and pre-eminently so of the obscure country doctor, upon whom the sun of publicity rarely or never sheds its ray. His life is passed in the homes of the very poor, and in acts of the kindest and most self-sacrificing service. For him the loss of rest and the loss of health is too often nothing less than the law of his work, and as he pursues his career, so glorious yet so humble, his left hand rarely knows what his right hand doeth. And yet such men as these maintain the state of the world. They pour oil or wine, as can or do few or none others, into the gaping wounds of our social system."

And now we are come to our parting. You will go out to find and make your own place and to carve your own destiny. It has been my pleasant and grateful privilege to address to you, on behalf of the faculty, this brief word of counsel, caution and advice. In their name I now welcome you to the ranks of the medical profession. In their name I extend to you the right hand of fellowship. In their name I bid you Godspeed in your chosen calling; not unmindful of the solemn responsibility we assume in thus standing sponsor for your knowledge, your skill and your conduct. You are the children of an honored university. You have a double obligation to discharge, that which you owe to yourselves and that which is due your *alma mater*. For upon you must rest the mantle of her reputation. See that you keep it pure, unsullied and unspotted. May you go out into your life work only to augment the luster of her fame as you build your own.

"The distant murmur which you hear will soon grow louder, and you will find yourselves swept into the whirlwind of the world's tumultuous conflict. Go forward in hope and serene courage. Disease is calling you from his bed of anguish. Death is looking for you to smooth his pillow. Posterity is expecting you, impatient to be laid in his cradle."

You have crossed in safety the shoals of the harbor bar of examination, though at times your keel may have grated ominously on the bottom, and you float at last in the still harbor of anticipation. You must now weigh anchor and stand out on the swelling main of life, spreading sail to the quickening breeze. Headwinds met and buffeting storms outridden, may the favoring winds of Providence make sure and complete the voyage that shall at last bring anchor securely in the harbor that is beyond the vale.

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs when they beat
For God, for man, for duty. He most lives
Who thinks most—feels the noblest—acts the best."

Rectal Injections of Arsenic are highly recommended by Professor Renaut, in tuberculosis, diabetes and Basedow's disease for their tonic and soothing effect. They can be continued for weeks or months with occasional interruptions without disturbance of any kind. He orders 5 c.c. of a solution of arsenious acid containing one-third of a centigram to each 5 c.c. three times a day.—*Nouv. Remèdes*, April 24.

ORIGINAL ARTICLES.

EXPERIMENTAL WORK ON THE PENETRABILITY OF VAPORIZED MEDICAMENTS INTO THE AIR PASSAGES.

Read at the meeting of the Mississippi Valley Medical Association in Louisville, Ky., Oct. 8, 1897.

BY HOMER M. THOMAS, A.M., M.D.

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Hippocrates was the first to devise a simple apparatus for the purpose of inhalation. In the seventeenth century Bennett recommended inhalation for consumption. Infusions of aromatic herbs (*halitas*) or even balsamic vapors (*suffitus*) were used. The discovery of oxygen revived new trials in this line. It was finally abandoned as air contained but little oxygen, and it was thought the atmosphere would have a more beneficial effect. Some hydrogen, nitrogen and even carbonic acid were used by Beddoes. Well remembered is the recommendation to physicians of that time, and even to the present, to inhale the air of stables containing cattle. About 1820 chlorin and iodine were tried with favorable effect; also turpentine vapors in chronic bronchitis. Muriate of ammonia vapors, the steam of escaping sulphur springs, the salty air in salt mines and the smoke of datura stramonium furnish further examples. A decided step forward was made by the improvement of the technique in vapor productions, especially the possibility to break up the fluids mechanically in finest globules after having dissolved the medicaments. In 1858 Sales-Girons introduced the first transportable apparatus for the vaporization of medicaments, to the Academy of Science in Paris. The new method soon found enthusiastic adherents as well as bitter foes. The chief query was, how deep does the fluid enter the lungs? By experiments on animals and on men, by chemic examination of sputa, by the laryngoscope, by inhalation of stained fluids it was proven with absolute certainty by the friends of this method, that it was possible for medicamentous fluids to enter the finest bronchi and alveoli. The penetration into the alveoli of the corpuscular elements, coal dust, etc., by inhalation was further proven. Peroxid of iron was found as a pigment in the lungs of miners, by Zenker.

The various anatomic examinations of diseases introduced from inhalations due to industrial pursuits, as anthracosis and calciosis (Zenker), and researches of Leon, Hirt, Steubner, G. Merkel, E. Wagner and Arnold leave no doubt of the penetrability of lung tissue by fluids or corpuscles, by inhalation. The possibility for a local therapy of the lungs seemed evident and all available medicaments were tried, but critical observations and experiments soon limited the possibility of this method. Dr. Adolph Schmid (Reichenhalt) says, inhalation therapy can not be regarded as a curative means; it has to play the more modest rôle as a supporting means to the other methods of treatment. It is likely to influence diseases of the respiratory passages by modifying various symptoms. Within these limits it must be considered as a method to be employed with good reason and difficult to do without. J. Schreiber, in 1888, by painstaking experiments gave a fair explanation of the influence inhalation had on diseases of the lungs. He con-