

Dr. Wallace Johnson

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Acknowledged

ADDRESS TO MEDICAL GRADUATES.

BY

CH. WARDELL STILES, A.M., PH.D.,

ZOOLOGIST U. S. BUREAU OF ANIMAL INDUSTRY; CORRESPONDENT ETRANGER
DE L'ACADEMIE DE MEDECINE (PARIS).

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BY CH. WARDELL STILES, A.M., PH.D.,
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It may possibly seem strange to you that the Faculty has selected a zoologist to give the parting word of advice to a medical class. Fifty or even twenty-five years ago this would have been looked upon as almost an act of high treason to the medical fraternity; but in recent decades there have been great changes in medical circles, and one of the most logical has been the recognition of the fact that no sharp line can be drawn between doctors of medicine on the one hand, and doctors of science or philosophy on the other; or in other words, between men trained in applied science and those trained in abstract science. My addressing you is, therefore, fully in harmony with the changes our respective professions have recently undergone, and I cannot refrain from expressing my satisfaction at having the opportunity of speaking to you upon this particular occasion, for I feel rather as if I belonged to the Class of '96, since I entered the Georgetown Faculty the same year you became members of the student body.

I intimated that there was no dividing line between the abstract and the applied sciences. The student of medicine is looking more and more to the chemist, the physicist, the botanist, and the zoologist for aid in solving his medical problems. To a chemist you owe the most radical change in thought and practice, which your profession has ever undergone, though it may not be known to you that this man, who has done more to lessen physical suffering in man and animals than any other person of

¹ Delivered before the graduating class of the Medical Department of Georgetown University, Washington, D. C., May, 1896.

this century, was not permitted by the laws of France to practise medicine. The noted Pasteur clinic of Paris, while virtually under the direction of that ideal man of science, was not under his control in the eyes of the law, and he was obliged to engage as his assistant a doctor of medicine, who should assume the legal responsibility.

But your relations to the chemist were not due to Pasteur alone. Chemistry has taught you nearly all you know about toxicology, and much that you know about physiology; it is the basis of your therapeutics, and if we ever arrive at a solution of that riddle known as "immunity," it will be largely through our friends the chemists.

To the physicist you are indebted for the use of electricity, the explanation of the normal and many of the abnormal postures of the body, the principles upon which your instruments are constructed, the explanation of certain conditions in which gravity plays a more important rôle than gravidity, and for the recent development of the X-ray, which promises so much that one is almost afraid to speculate in regard to its manifold applications.

To the botanist you are indebted for data concerning medicinal plants, as well as for very important researches in bacteriology; and it is my firm conviction that if bacteriology ever emerges from its present chaotic systematic condition, it will largely be through the direct or indirect influence of botany, for the pathologist without special training in taxonomy is no more capable of reducing the bacteria to a natural classification than is the botanist without special training in pathology capable of correctly interpreting pathological histology.

To the zoologist you owe the transformation of anatomy from a descriptive into an explanatory science. He has already solved the riddles of many of the rudimentary organs of the human body. You are no longer taught that the pineal gland of the brain is an unexplained organ, possibly the seat of the soul, but you are told that it rep-

resents a rudimentary third eye, which has been traced through a long series of animals until found developed to such an extent in certain reptiles that it is probably capable of perception of lights and shadows, while the paleontologist has here come to our aid and shown that in certain fossil reptiles this organ must have been a comparatively well-developed interparietal eye. You no longer learn a minute description of the *plica semilunaris* and then wonder what it is, for you are told that it is a third eyelid, very rudimentary in most human races, slightly better developed in the Malay, while it is well-developed and functional in birds and frogs. Your present knowledge of embryology, histology, the origin of the individual and of the race, and even the *raison d'être* of that fashionable death-trap, the vermiform appendix, you owe directly to zoology. This science has further given you certain animals, such as sponges and the Spanish fly, to be used in your practice; it has given you scientific data concerning the poisonous snakes, which cause so many deaths, and the animal parasites, with names often much longer than the organisms themselves; it has shown you means by which certain diseases may be prevented. In fact, your profession is, in reality, pathological zoology.

Permit me briefly to call your attention to two ways in which you may repay, in part, what you have borrowed from zoology. As practising physicians you will occasionally be able to collect material which will be of use to zoölogists. Too frequently the practitioner allows valuable specimens, such as young embryos, deceased monstrosities, and parasites to be cremated, buried, or thrown away, instead of saving them for scientific study. You should remember that no embryo is so young, no monstrosity or parasite so common that it is not of some use to the scientist. How often have physicians said to me: "I would have saved the specimen, had I thought it could

be of use to you!" Gentlemen, let me tell you again, as I have already told you in the lecture-room, all such specimens should be saved for scientific purposes. If you meet with objection on the part of the family, which, fortunately, rarely happens among the more educated classes, you can at least make careful observations and notes upon the case. And this leads me to the first suggestions in the way of advice, *i.e.*, observe carefully, and take notes of your observations. These notes cannot be too detailed, especially at first; and probably, for a year or so after graduation, most of you will have ample time to take rather copious notes upon all you observe.

Again, in your practice you will occasionally observe peculiarities in structure, which should be placed on record, such as polydactylism, polymastism, polyorchism, pseudo-hermaphroditism, etc. In all such cases, urge your patient to submit to examination by an anatomist, and if he declines, study the case in detail, look into the family history, and ascertain whether similar peculiarities are known among the relatives. But, before you publish your observations, inform yourself upon the literature of the subject. And this leads me to several further advisory suggestions: I should advise you to keep up your studious habits and not to "rush into print."

As for rushing into print, you may not know that the first serious disease which attacks the graduate is the publishing disease. He is soon seized with an absolute conviction that he is called upon to write an article which shall contain every fact known upon a given subject. I once knew a young graduate in medicine who decided to write a monograph upon the horse. This work was to contain every fact (discovered or undiscovered) about the equine species. I met him from time to time for several years, and saw the plan of this great epoch-making equine encyclopedia gradually dwindle down until the would-be authority published an extensive review of an-

other person's paper on the rudimentary bones in the horse's leg, attaching his own name to the review, but inadvertently omitting the name of the original author and article. Now, gentlemen, do not, I beg of you, write an epoch-making monograph the first year after you graduate. The book-writing disease is one you are all subject to. It is, however, very amenable to treatment, and this is quite simple, although somewhat heroic. It consists in reading a few books which have been written by other men suffering from the same disease. Select any subject, however small, go to the surgeon-general's library and read every article you can find upon that subject, and in most cases, I believe, you will come to the conclusion that you will not publish your monograph until you have made a few original observations in that particular line and have something to say. Do not disgrace yourself and your Alma Mater by becoming a bibliographic kleptomaniac.

In your medical writings, never use a scientific word unless you know its exact meaning and its application to the subject you are discussing. Scientific names are necessary evils. In the writings of one who knows their exact meaning, they are useful; but when used in a loose and inexact way they show poor taste, reminding the reader of Browning's lines:

As when in certain travel I have feigned
To be an ignoramus in our art,
According to some preconceived design,
And happed to hear the land's practitioners,
Steeped in conceit sublimed by ignorance,
Prattle fantastically on disease,
Its cause and cure—and I must hold my peace!

in the letter of "The Arab Physician."

Speaking for my own specialty, I regret to say that fully one-third of the articles on medical zoology which I have found in the medical journals are unintelligible to the specialist—whatever may be the ideas they convey to

the practitioner—largely because of the reckless use of technical terms.

It is always a good plan to submit your articles to a specialist or to your colleagues for criticism before you send them to press. Another good plan is to place your manuscript—especially if it is your first effort—under lock and key, from sixty days to sixty years (so that the ideas may not escape), the time of confinement varying directly in proportion to the importance you attach to the views you advance. If you feel convinced that your ideas are destined to revolutionize modern medical thought, sixty years is rather a short period of imprisonment for your manuscript; while if, in your early articles, you “decide” that “no such disease exists as hydrophobia,” that “the claims which the advanced members of the profession make for antitoxin are absurd,” that “Harvey did not use vivisection in studying the circulation of the blood,” or if you suddenly “come to the conclusion that “Koch’s discovery of tuberculin is useless” and that “no good has ever come from animal experimentation,” then imprisonment for life, or even capital punishment, would not be too severe treatment for your manuscript, and possibly for the author also.

Be careful about your language in writing. It is always better to say that you believe an author is “in error” (let it be Pasteur, Koch, Claude Bernard, Laboulbène, Blanchard, Welch, Sternberg, or Salmon) than to say that his “statement is false.” In either case the reader will simply take your assertion as meaning that there is a slight difference of opinion upon the subject in hand, and the more modestly and delicately you express your own view on the subject, the more weight your article will have with those who read it.

So much for your opportunities to aid zoology. I now wish to make a suggestion concerning “bread-pills” from the standpoint of a non-practitioner and occasional patient.

It is generally supposed by young graduates that it is always best to look wise and administer "bread-pills" in case you are in doubt as to diagnosis and treatment. To make this rule absolute is, I believe, a serious mistake. I maintain that bread-pills are perfectly justifiable, but that they have their place. In many cases they may work upon the imagination and thus lead to speedy recovery, while there is a chance that a more heroic treatment might result otherwise. There are some people, however, who believe that an honest confession of ignorance and a willingness to study the case are occasionally better than a show of knowledge; and if any of you ever enter abstract science, this is the first lesson you will be obliged to learn. I would therefore respectfully suggest, from the standpoint of certain patients—possibly the minority—that you study human nature and take into account the temperament, as well as the temperature of your patient; that you keep a large supply of bread-pills on hand; that you give them freely, though not free, to all patients who need them, but give to yourself, at the same time, assurance and vows of faithful study of the case. You should educate your patients, as well as yourselves, to the truth that it is often more important to decide what to proscribe than what to prescribe.

What I have said thus far applies to the entire class, and now I have a closing word of advice to give to about five or ten per cent. of the class, *i.e.*, experiment. Advance in medicine is suggested by observation; it is made by experimentation. All practitioners are capable of observing, some are capable of experimenting. Certain conditions, however, must be complied with before you essay experimentation. I refer, first of all, to a thorough knowledge of the literature upon the subject you wish to investigate, so that you may know the successes and failures of former investigators in that particular line. In the next place, perform your first experiments under

the direction of some experienced investigator; and finally, and most important of all, hold fast to the view defended by the humane profession you have just entered, *i.e.*, that a human life is worth more than the lives of all the stray dogs within the field of your observation. Establish results by animal experimentation before you try theories on human beings, and, if a short-sighted, sentimental, and medieval policy at the end of the nineteenth century results in legislation which will seriously hamper or prevent such experimentation in one part of a civilized country, move to another place, rather than risk human lives in experiments which can be performed elsewhere upon the lower animals.

Finally, gentlemen, on behalf of the faculty I desire to thank you for your faithful work these past four years and to wish you all the success possible in your practice. While in practice, do not lose sight of the fact that the principle of the "survival of the fittest" holds in the medical profession, as well as in the "origin of species." If you wish to survive as one of the fittest, it must be by an honorable and professional "struggle for existence." In the time of your successes and reverses do not, however, forget your Alma Mater, for she will always have for you a word of welcome, of comfort, and of praise.

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