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HOW MAY THE TOPICS IN EXAMINATION FOR LICENSE BE BEST ARRANGED BY EXAMINING BOARDS?*

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Mr. President and Fellow Members:

The answer obviously must be: In such a manner as to achieve the results for which examining and licensing boards were instituted. What this constitutes, an apparently irrelevant and somewhat elaborate review of the causes operative in determining, not only the establishment of examining boards, but the type of examination they are respectively required by the various acts of assembly to conduct, is necessary for a correct solution.

Addressing ourselves to the consideration of the many-sided question the title presents, it must be constantly borne in mind that examining and licensing boards, by directly and legally controlling licensure, indirectly standardize medical education. They thereby serve an important function for the greatest good of the profession, and discharge the highest responsibility to the welfare of fellow man. That the answer is, therefore, comprehensive and complex, and appeals to the best judgment at our command, is evident.

As the type of examination, which law compels each board to conduct, possesses certain characteristics pertaining to medical education, as it prevailed prior to the era of the control of practice by legislation, the course of study leading to the degree, with its associated conditions and results, must be reviewed, in order that intelligent answer may be given to the question before us. This is essential, because the factors potent in establishing the type of existing medical legislation are still more or less operative in perpetuating influences proving obstructive to that progress in establishing "higher medical education," which the untrammelled and conscientious exercise of intelligent prerogative should be able to achieve without further delay.

It must be recalled that medical legislation became necessary in order to protect humanity from the fearful consequences of incompetent practitioners; that the possession of a diploma, conferring the degree and the right to practice, was possible to anyone, whether illiterate, and consequently incapable of comprehending the science, or the master of that system of medical education which was conventionally admitted to be sufficient. That so large a percentage of incompetent practitioners possessed the right to practice was, because the medical

college indiscriminately conferred the doctorate, and thus proved false, not only to its moral obligations, but to corporation law, which granted its charter and established its existence. Diplomas were legal instruments for both good or evil, as the possessors were competent or not, and afforded protection for the unfit clinician, no matter how serious the results of his ignorance might have been.

Obtaining charters and becoming incorporated was a matter of such ease, and the enormous financial profits accruing from the business of "grinding out doctors" so alluring that "regularly incorporated medical colleges" sprung up on every hand, and thousands of graduates, technically styled physicians, were annually set free upon an innocently confiding and credulous public. The lax administration of this defective system became a firmly established conventionalism, and acquiescence therein by both the laity and profession proved a most fertile soil for the growth and development of those influences that have resulted in the enactment of such laws as we possess. It was only after years of the appalling disaster, which was a necessary result of the deeply-rooted, firmly established and debased commercial, and utterly inadequate system of medical education, that the era of medical legislation became inaugurated.

Acts of Assembly as molded by state influences are, therefore, more or less a control, not directly, be it observed, of medical education itself, but only of its results; their degree of efficiency is just in proportion as intelligence and principle dominate ignorance and moral obliquity. Why the various state laws differ so greatly in standard requirements is best known by those who were identified with effort exerted in securing Acts of Assembly, and the nature of those influences, when demonstrated as we proceed, will be recognized to have been then, as now, what has been fittingly designated, a debased commercialism. In its various manifestations it was applied to financial, educational and political powers, for the purpose of preventing the adoption of immediate and complete corrective measures.

For obvious reasons, medical colleges could not be remodeled, and the beginnings of successful reform were necessarily directed against its resulting incompetent yet technical doctor. It was recognized that if incompetent "M.D.'s" could not secure license, that fact would result in the failure and disappearance of the diploma mill! It would indirectly compel the medical colleges granting useless diplomas to so augment and improve their work as to insure the patronage of a large body of students whose fees would be essential to its existence. It would render medical education, in its broadest sense, what it should be, and ultimately result in eliminating from the undergraduate body, the hordes

* Read before the National Confederation of State Medical Examining and Licensing Boards, at Saratoga Springs, N. Y., June 9, 1902.

of illiterate, still too prevalent, and admit only those adequately educated. It would complete a defective curriculum, and demand those modifications in the field of work, facilities for study, teaching and practical training, that are essential for the graduation of the competent practitioner. Is it any wonder, then, that we are prepared to consider opposition to such a corrective by every medical college or indirectly interested institution of learning whose commercial interests, in the sense of money gain, would be less profitable in the pursuit of honest than dishonest methods, and to recognize why some state laws are compromise measures?

Are our laws, and the means of their administration, "the examination," fulfilling the purposes for which they were enacted and instituted; and if not, why not?

Let us here recall that which, with a stretch of conscience, will be designated the "medical curriculum," as it prevailed during the free reign of commercial medical education.

It was composed of the seven topics, anatomy, physiology, chemistry, materia medica and therapeutics, obstetrics, theory and practice of medicine and surgery. How these were taught is too painful a chapter to open, but as certain values were accorded some branches and the type of examinations therein was then, as now, somewhat alike, it possesses a direct bearing on our theme. These seven topics were the subject of a course of lectures extending over the ridiculously insufficient period of five months. This constituted a so-called year of medical college work, and after being repeated once, i. e., a professed study of medicine for two years, was followed with a farcical examination that was almost certainly passed by all, except the veritable dunce; receiving the diploma and—what shall be said?

The relevance of this allusion to our subject consists in its demonstration of the fact that illiterate students could memorize, not comprehend, and that the character of teaching was preëminently the same. There was an almost total absence of study and training in the applied features of the included sciences, and is not the memory feature the great defect of state examinations to-day? To emphasize this point, permit an illustration: A recognized authority, perhaps a teacher and author, is obliged to locate in a different state; it is necessary to undergo a state board examination, and in topics like anatomy, physiology, chemistry and materia medica, questions will be propounded that deal only with the merely abstract facts, as they were demanded of yore, not their applied features, and because these never-used phases are long since, necessarily and physiologically, forgotten, he technically fails, although practically merits, and should receive license.

The doctor recently graduating under the conditions of a merely memory system of medical training could repeat in masterly detail the names of arteries, and in the order in which they arise from the main trunk, or name the nerves composing a plexus, and repeat the symptoms and give the correct terms of the physical and diagnostic signs of acute lobar pneumonia, of typhoid fever, and yet, unless possessed of that essential knowing which is the result only of the educated perceptive faculty, would not, because he could not recognize them, if encountered at the bedside.

Does not the administration of medical law, as it is at present, while vastly improving the thoroughness of medical education as it was, at the same time perpetuate, to a certain degree, the very evils it was intended to correct and overcome?

To be more explicit, medical legislation has achieved grand results in bettering teaching and also by requiring the memorizing of a wider field, and a more thorough mastery of such a curriculum as existed. In some states, by means of the scope and type of examination, it has brought about partial training in the application of the principles of medical science. The laws vary from one another in almost every state; some require a specifically defined preliminary education in addition to the medical, while the latter unfortunately frequently differs greatly in degree, even in a given state; again, a few admit candidates to examination who need not have obtained the degree! When the memory characteristic of state examinations is contemplated, and the vastly differing standard requirement is remembered, it is very apparent how the administration of state law must, of necessity, entail not only hardship but injustice upon the competent practitioner who may be a candidate for licensure in this or that commonwealth. These very conditions necessarily limit the territory of license right and prevent recognition of one state by another! In arranging topics for examination, examining boards can accomplish much in overcoming these serious defects. The latitude of prerogative possible in adjustment centers around the distinctively medical character of our function. The significance of this will be apparent when reference is had later to an attempt made in Pennsylvania by commercialism to circumvent the specifically medical exactions of the Act governing practice. Corrective amendment of these defects of medical law is still a dangerous resort, and it is better for examining boards to arrange the topics in examination for license in such a manner as to approach uniformity of standard rather than attempt to modify existing statutes. This means much more than at first appears, and suggests whether it be done so as only to obtain the best possible results from the existing inadequate system of medical education, i. e., to have it remain as it is, or in a manner that will indirectly compel the colleges to so modify the scope of study, methods of teaching and practical training as to enable candidates for licensure to pass state examinations which will, in reality, be examinations that actually demonstrate an adequate knowledge and comprehension of the principles of medical science, and the possession of a sufficiently cultivated skill in its art to merit the legal instrument that declares them so to be.

It seems strange, yes, more than strange, that that science which underlies the most important principles indissolubly associated with man's highest achievements, whether relating to social, commercial or family affiliations, has, until the present, been permitted by both the profession and laity to be subjected to the basest abuses of unprincipled commercialism; diseased by absurd "pathies" and "isms," the outgrowth of culpable ignorance and morbid emotionalism; its progressive growth and development seriously retarded by perverted religious fervor and degraded political power; and law prostituted to the low level of affording protection to medical fraud and crime.

The National Confederation of State Medical Examining and Licensing Boards represents the recognition by the laity and profession of the conditions outlined, and exists because of the corrective and protective laws this recognition culminated in having enacted. It stands exponent for the conscientious and impartial administration of those laws and is, therefore, the embodiment of the legal authority that must, sooner or later, establish upon a sure and permanent foundation a sys-

tem of education in the science and art of medicine which will, in every sense, result in the competent practitioner.

The Confederation, after a decade of experience, is able to study the many phases of its work, and intelligently cope with the complex problem presenting in the title.

One function common to all boards in the earlier period of our existence was to refuse license to a large proportion of candidates who were too illiterate to comprehend medicine. These, however, possessed the right to be examined in medicine, because of the defect of the Act of Assembly, which did not have supervision over general educational qualification, and, as they possessed diplomas bearing the signatures of the trustworthy and honored faculty who so conscientiously discharged the duties supposed to be observed by the regularly incorporated medical college, were eligible for examination for licensure.

Happily, those laws which did not standardize preliminary education, enabled refusal of licensure to such as could not, because of mental inability, possibly prove themselves to be fit to assume the imposed responsibilities which these worthless diplomas, bearing signature of like worthless professors, declared them to be.

We thus confront another feature requiring recognition in solving the problem before us, to-wit: the relation of general education to medical. This must be observed in arranging the topics for examination. It also discovers another element active in commercial opposition to the establishment of effective reform in medical education, i. e., that of the outside institutions which might apparently (mark the word "apparently") have some claim for recognition by the medical college, because of those fundamentals which in name only are common to each. Our experience also demonstrates that the degree of M.D. is conferred in some states by colleges (regularly incorporated) which do not include as many topics as the higher standard of qualification necessitates; also after terms of college work, varying from about five months in each year to more than eight, while some few still grant diplomas after indulging in that reprehensible practice of admitting to advanced standing in their so-called four-year course, graduates of pharmacy, biology, dentistry, veterinary medicine and what not.

A decade of experience with these diverse conditions and standards makes plain one stupendous fact, viz., there is not, in the pedagogic sense, a medical curriculum! This fact not having been officially proclaimed, even if but vaguely recognized, is one reason for the question our title presents. The M.D. degree, the diploma, it is now superfluous to affirm, still represents anything from that ignorance of medicine, born of illiteracy, to scholarship in both general and medical education, and to determine in which category the candidate for licensure is to be placed, is the especial function of the state medical examination!

The various state laws include more or less of the standard requirement approximating the essential, and each particular examination more or less completely fulfills its function, but at best results in licensure of greatly varying degrees of efficiency so that, as medical education prevails to-day, a license privileges practice only in the state by which it is granted. There are states that to-day recognize the diploma of certain accredited colleges, and issue license without any examination! That which is admittedly the medical curriculum of to-day comprises the seven branches above named, and, in addition, more or less of the "ologies"

that have assumed the proportion of "specialties," but with all, is separable into two parts, the so-called fundamental, including anatomy, physiology, chemistry and materia medica, and the practical, namely, pathology, "practice," obstetrics, surgery and therapeutics, and such outgrowths as gynecology, ophthalmology, otology, rhinology, laryngology, neurology, dermatology, pediatrics, and several minor specialties cropping out of these. Hygiene, medical jurisprudence and toxicology are included in some courses leading to the degree, and only by some of the state examinations.

How these topics may be best arranged requires consideration of one other very important factor that resulted in Pennsylvania, at least, in an attempt to so hamper the administration of its medical law that, had it succeeded, a severe blow would have been dealt to further progress in higher medical education and much done to perpetuate the inadequate system of teaching the Act of Assembly was intended to correct. The factor assumed formidable shape in claims being made for work in the so-called fundamentals, which, in name, constitute branches in courses of study leading to certificates and degrees in biology, arts, science, dentistry, veterinary medicine and pharmacy, as well as in medicine. This resulted in graduates of these varied pursuits being admitted to the second year of the exacted four years of exclusive medical study. The commercial medical colleges assumed the right to consider this type the equivalent of a first-year medical student, and with the understanding that certain branches of the first year's work which biology, dentistry, pharmacy, etc., did not include, be "made up" during the second year, granted "advanced standing," and matriculated them as second-year medical students. Observe that by so doing the medical college assumed the right to pronounce as identical with the study of medicine that of biology, pharmacy, etc., and that by granting advanced standing to such graduates it opened the medical college door for the admission of the illiterate because, as should be well known, schools of dentistry, pharmacy and veterinary medicine did not exact matriculation examinations, which were a test of essential adequate preliminary training. In this manner those state medical laws that required general educational qualifications as a condition for the pursuit of medical study were capable of being circumvented and the degree of M.D. could, by the unwarranted assumption, become obtainable in three instead of four years. Inquiry discovered that seldom, if ever, were these "make ups" exacted. Emphasizing what is known to all that, the time necessarily occupied in accomplishing the work of one year absolutely prevents students from simultaneously carrying a portion of that of another, demonstrates the impracticability of such a scheme, and is so apparent as to need nothing but emphatic condemnatory mention.

Reference to a defect in the Pennsylvania law will indicate what all this means in arriving at a solution of the question our title propounds. The Act required four full years of the study of medicine in order to obtain the degree, and therefore admits to examination for licensure only those who have obtained the diploma under these conditions. It unfortunately reads that three of these years must have been spent in different years in a "regularly incorporated medical college," but does not provide for that fourth! It is now easily perceived why the commercial medical college arrogated to itself the right to dub work above mentioned, the *bona fide* study of medicine, and offered inducements to any institution whose course of study happened to

include one or more of the sciences constituting the medical curriculum to coöperate in the effort to secure its graduates for matriculation as advanced students. What happened when the writer, in his official capacity, disputed the legality of this assumed right to circumvent the law, and confer the doctorate by a short-cut process? A resort to sophistry. It is the study of the nature of this sophism that bears most especially upon the solution of our problem. Please observe that anatomy as a science is pursued in some phase or other and in varying degrees in art and biology and is required by some literary colleges from candidates for the A.B. degree, hence these institutions could, on this basis, claim certain qualifications for their graduates about to enter the medical college and attempt to secure advanced standing. Physiology and chemistry are included under the same conditions and, therefore, any institution teaching these, no matter how superficially, could have extended to it, and did, by the commercial medical college, the same privileges of advanced standing. Pharmacy, including materia medica and chemistry, but not anatomy and physiology, and, of course, embryology and histology, was the source of supply of a large body of students admitted to the second year of the medical college. The first year of medical work embodies a certain kind of study in one or more of the branches which all of the above pursuits include: please especially bear this fact in mind! The kind of study is intrinsically medical in contradistinction to dental, pharmaceutic, biologic, etc. More than all, one or more of these branches are, from every point of view, better taught by non-medical colleges, but mark you, in a non-medical method, while others are more thoroughly taught by the medical college. Thus, chemistry, as pursued by the colleges of arts and science, is more elaborate and thorough than that of the average medical college, and materia medica and chemistry by colleges of pharmacy. The medical college teaches anatomy and physiology better than any literary or other institution, and amid medical environment.

Now for the sophistry: When short-cut diplomas were refused recognition as a credential necessary for the right to be examined for licensure, the assertion was made that, by refusing to grant advanced standing to bachelors of arts and science such administration of the law was depriving the medical profession of that educated element which was essential to founding higher medical education. Objection to the interpretation of the law was bitterly and actively made by a large committee of literary college presidents, commercial medical professors and by all their coöperators who could be deceived into such erroneous action. The literary college claimed that its graduates were better grounded in chemistry and by some even in anatomy; the dentists, that they were practically as generally well qualified in anatomy, physiology, chemistry and materia medica, and so on, and thus every effort was exerted by these various elements to have their graduates obtain the degree of M.D. in three years.

Need it be indicated that the approval of such a procedure would not have added one iota to the medical curriculum? Is it not evident that, no matter what qualifications may have been possessed by anatomists, chemists, biologists, bachelors of arts, science, etc., as such, their studying medicine as its curriculum required, was not augmenting that curriculum or in any manner establishing the conditions which are so well recognized as a *sine qua non* for higher medical education.

On the other hand, had this formidable body of influential citizens succeeded in securing official recognition of the false claim, is it not manifest that the inadequate system of medical education would have remained just as it was and be still more securely entrenched? It was necessary to defeat this sugar-coated lethal sophism, to demonstrate that the fundamentals (and this makes plain the specific nature of our function as an examining body for licensure) are sciences not medical, but possess phases in an applied sense necessary for such diverse pursuits as agriculture, botany, sculpture, the utilitarian arts, etc., and that unless their pursuit was distinctively medical and covered that of the first year of our medical colleges of repute, advanced standing could not be legally granted. An art student having pursued anatomy as applied to art in no sense has studied anatomy as applied to medicine.

The term "exclusive," applied to the medical law in its specific medical interpretation, was adopted after weeks of discussion and be it thundered far and wide to the credit of the Administration of Pennsylvania, the decision was unanimously reached declaring four full years of medical study to mean four full years devoted to the exclusive study of medicine. By this victory over commercialism, the reign of medical legislation was instituted in its entirety, and, to-day, every medical college in Pennsylvania is obliged to grant its degree only after four full years of the exclusive study of medicine. What all of this has to do with our topic may perhaps be asked; it is this—to so arrange the topics for examination for license as to include those sciences which the various Acts of Assembly embody in common as a whole. This will necessitate on the part of some states the adoption of topics required by others, and where laws will not permit of this, the indicated amendments to the Act, necessary to accomplish it, can probably now be safely attempted. This would involve the related commercial interests earlier outlined, but as both profession and laity are cognizant of the general benefits resulting from higher medical education, there is a greater probability of success than has ever before promised. The distinctively medical function of each board must ever be borne in mind in formulating questions for examination, especially as by so doing commercialism as it was attempted by institutions indirectly related to the medical college, can never again assail and shake the foundations of genuine medical reform.

A chemist could not possibly claim advanced standing unless he were a master of chemistry as applied to medicine. A bachelor of arts or science could not be granted advanced standing in the course for the degree, because he pursued anatomy as a science and that probably by the use of diagrams, manikins, etc., or even by the dissection of a dog or a cat. The topics for examination should be, anatomy, including embryology and histology, physiology, materia medica, chemistry, bacteriology, pathology, including morbid anatomy and histology, hygiene, theory and practice of medicine, surgery, obstetrics and therapeutics, and if intelligently limited in the extent of requirement, necessarily those diseases also naturally within the skill of every practitioner and commonly encountered in the so-called specialties. Thus, questions in the main topics should include subjects embodying diseases of the eye, ear, nose and throat, nervous system, skin, and the diseases of children, and in obstetrics those accidents incident to labor generally regarded as belonging to gynecology. Toxicology as pertaining to materia medica, but not as a separate topic, should be required. They should be arranged in a logical order

or natural sequence—thus, first, anatomy as it is essential for the intelligent pursuit of physiology and the latter for pathology, while comprehension of the major branches is possible only after mastery of these, not as sciences, observe, but in their applied phases. Embryology is necessary for knowing the histology, i. e., characteristics of the structures evolving from the blastoderm, and this in turn for the comprehension of physiology. The examination in anatomy would, therefore, include questions in embryology and histology, but, permit the emphatic reiteration, only upon their applied phases.

Physiology is naturally next in order, and questions in this topic should have eliminated all impracticable and merely abstract facts. Careful selection of physiologic questions will lead to proper ones in pathology. The two embody that knowledge of structure of the functioning tissue and pathologic changes incident to both organic and functional diseases which seems to naturally associate them and they should be combined so as to constitute one paper.

A branch still to be developed and occupying an intermediate position is chemistry—not the chemistry the majority of medical colleges teach; that should be dispensed with entirely and made a requirement with physics (by the way) for the matriculation examination. We could then examine candidates, whether recent graduates or experienced practitioners, in chemistry as applied to medicine and thus bring about the establishment of a chair so entitled in every medical college; and this applies with equal force to anatomy and physiology.

Thorough instruction in this topic is absolutely necessary for comprehending physiology and certain phases of pathology, and, also, for intelligent work in the analyses of the body secretions and correct interpretation of the results. This branch, in the applied sense only, should, perhaps, precede physiology and pathology in the arrangement of topics, especially as the effects of bacteria, etc., on function and pathologic processes are in many instances of a chemical nature. Physiology and pathology very properly include bacteriology as applied respectively to each and this branch need not, therefore, constitute a separate topic. Materia medica bereft of the superfluous botanical, geographical and pharmacological features so commonly associated, and confined to crude drugs, official preparation and doses, seems to fit in here and could have associated "physiological action" or pharmacodynamics and toxicology, the latter as applied to the materia medica.

Practice, including, of course, what naturally belongs thereto, not as a separate topic, diagnosis, should be limited to etiology, symptomatology, prognosis, sequelæ and treatment and embody the commonly met diseases of any system or organ that latterly is the basis, wisely or not, of exclusive specialism. Certainly every clinician should be conversant with iritis, glaucoma, and the inflammatory affections of the superficial structures that are properly treated on general principles, and be able to differentiate cataract from chronic glaucoma and degenerations of the optic nerve. An otitis media suppurativa should never be mistaken for meningitis, and parasitic and specific cutaneous lesions should be within the sphere of every licentiate. Whether these should appear as special topics or be understood to receive recognition by every examining board and included in the questions of the major topics, is a matter for consideration.

The Confederation is the embodiment of that power which legally regulates practice. Its examination, there-

fore, fixes the standard of fitness and necessarily molds the system of medical education. It doubtless possesses the right to modify, as experience has indicated, some functions connected with the discharge of its weighty responsibilities, and by wisely exercising this prerogative can so arrange the topics in examinations as will, in every sense, be the best.

In conclusion, permit tabulation: If arranged for the best, topics will be included by each examining board that will indirectly compel every medical college to teach them. The scope of the examination will determine that included in the course of study leading to the degree, while the character or type of the examination must fix that of the teaching. This will accomplish one matter of vital import, viz., teaching and examination in the applied phases of the fundamentals. Thus, establishment of the much-needed curriculum will be indirectly brought about by a proper state examination and those commercial interests briefly outlined, which a decade of experience has taught examining boards to recognize as detrimentally potent in retarding the establishment of an effective type of examination, presenting under the guise of political, institutional, financial and personal interests, will have been effectually neutralized, and, in the near future, totally eradicated.

The establishment of a curriculum alike for every college granting the degree; a state examination the same in type and extent for every license will impart to medical education that distinctively essential individuality its importance merits; the same standard for matriculation examination; in a word, uniform standard in both general and medical requirement for uniform license right, will result from the best arrangement of the topics for examination for license, by examining boards.

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DEFLECTED PRESENTATION IN LABOR.*

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The obstetrical terminology lacks in general exactness and precision. This is especially true, so far as slightly deflected head presentations are concerned. Not only in occasional papers and in general practice, but in textbooks which are considered standard books the normal head presentation is spoken of as vertex presentation, while there is no attention whatever paid to deflected presentations which lie between the normal inflected presentation and the face presentation. The normal head presentation is the occiput presentation and not the presentation of the vertex, which is the top of the head. In occiput presentations the posterior fontanelle is the lowest point of the skull. If we have to deal with a vertex presentation there is a slight abnormality, a slight deflection which brings anterior and posterior fontanelle into the same level.

SOME ETIOLOGIC FACTORS.

Without entering into a discussion of the various theories concerning the causes of this slight deflection, I might just state that in cases where the fetus is the possessor of a struma or where the mother is the carrier of a pendulous abdomen, anterior vertex presentations are most likely to happen. Some authors claim that uniformly round heads, especially if this instance is combined with a flat maternal pelvis, furnish the majority of these presentations. The frequency

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.