

have two colleges each and six others have one each. At least half of these denominational institutions are small, struggling and of low educational standards. One of the Presbyterian "colleges," for instance, is made up of 164 preparatory and 44 college students. One of the Lutheran "universities" is composed of 35 preparatory, 48 collegiate, 12 professional and 17 *graduate* students, 15 of the latter being non-resident. Assuming that the denominations can make real contributions to higher education, such multiplication as this is surely unjustifiable. Its effect is to reduce all education to a lower level and to depress all betterment of the teacher's place.

When an institution calling itself a college hires its professors by the month, and pays such salaries as only youths just out of college can accept, it is not to be expected that a high sense of obligation will characterize its trustees. In the gradual process of the country's growth such institutions will either disappear or find their true place, many of them as secondary schools. But, meanwhile, it is not in these institutions that one must expect a just sense of appreciation of a professor's service. It is in the stronger colleges, whether small or large, that one must expect the beginning of the movement for a just recognition of the obligation that the college owes to an old and faithful servant.

Quite naturally, the creation of the Carnegie Foundation conveyed to many college boards the impression that the establishment of such an agency lifted at once from the shoulders of college authorities all obligation to care for their worn-out or disabled teachers. The very opposite is the fact. The creation of the Carnegie Foundation makes clear and emphasizes the obligation of educational organizations to deal justly, thoughtfully and generously with those who have given a life's service

to education. The very purpose of the fund is to arouse in college authorities an appreciation of this obligation. The trustees of the foundation can provide retiring allowances for only a small fraction of the college teachers of America. The duty of the individual college in this matter still remains, and is but the greater now that the principle has been made clear.

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GENERAL EXAMINATIONS IN A MEDICAL  
SCHOOL: PLAN OF EXAMINATION  
RECENTLY ADOPTED AT  
HARVARD<sup>1</sup>

THE curriculum of the medical school has been a frequent topic of discussion in recent years. This association has devoted much attention to it and it continues in one form or another to occupy much of our time. A minimum curriculum requirement for a standard medical school is the basis for admission of a medical college to the Association of American Medical Colleges, and we determine the ability of the school to give efficient instruction within the limitations of this curriculum before we accept them for membership. It is clearly understood that we have fixed a minimal standard, but make no attempt to mould each school after a single fixed model. It is recognized that variations in personnel, in physical equipment and in local conditions make impossible the same type of teaching in every school. Were this possible, it would not be desirable, for no surer means of stopping progress could be conceived. It is the duty of each of us to try new methods and to share with others the experience so gained. From this alone can improvement come.

It has seemed to us at Harvard that medical schools have tended toward too great a rigidity of curriculum with too many separate examinations. This has resulted in leaving too little to the initiative of the student and in producing students too crammed with facts, too little able to think and to apply intelli-

<sup>1</sup> Read at the meeting of the Association of American Medical Colleges held in Chicago, February 28, 1912.

gently their knowledge. For some years we have been attempting to change this condition, and various steps toward this end have been taken. The plan of fourth-year electives on which I reported to you at a previous meeting in connection with the concentration system of teaching<sup>2</sup> was a step in this direction. This year we took another step in adopting a new plan of examination, which we believe will serve a twofold purpose, lessening the rigidity of the curriculum, and facilitating the correlation between the different subjects of the curriculum by placing before the student a new form of test for which he must seek to prepare himself.

The new plan of examination goes into effect with the class entering next year, and will not be applied to the classes in advance of that. Consequently four years will elapse before it has been tested in its entirety on one class. To at least five classes it should be applied before any opinion as to its real value can be given. At this time I can only explain the plan as we propose to try it. It may be of interest for you to know of it; perhaps some will care to apply it in their school. We believe it to be a distinct improvement and one that will lead to other changes in the curriculum. Already with this in view a committee has been appointed to restudy the curriculum and to propose any changes needed to meet these new conditions. The new plan of examination is to be regarded as part of a larger plan being worked out gradually and intended to improve our medical instruction.

The new plan of examinations is as follows. Written tests at the end of each course were formerly held. These are done away with, and in their place practical examinations are to be held, which are the only examinations conducted by the individual departments. The general committee in charge of examinations has supervision over the practical examinations, and they are to be a measure of the student's practical knowledge and skill. The student may choose whether he will take the practical examinations at the end of each

course, or near the time of the general examination. Practical examinations in all courses included in a general examination must be satisfactorily completed before the student will be admitted to the general examination. The practical examinations are to be graded and the marks so received are to make up 40 per cent. of the grade given on a general examination.

There will be two general examinations, one at the end of the second, the other at the end of the fourth year. Both will be partly written, partly oral. The subjects comprised in the first will be anatomy, histology and embryology, physiology, biological chemistry, pathology and bacteriology. Furthermore, this examination shall assume and require an elementary knowledge of physics, inorganic and organic chemistry and biology. The subjects comprised in the second general examination will be preventive medicine and hygiene, materia medica and therapeutics, medicine, surgery, pediatrics, obstetrics, gynecology, dermatology, syphilis, neurology, psychiatry, ophthalmology, otology and laryngology. For the first general examination the student may choose either June or September, for the second, either June or January. This difference in time is due to the custom at Harvard of awarding degrees both at mid-year and at Commencement. No student who fails to pass a general examination may repeat it within the calendar year in which he failed. No student will be permitted to begin the work of the third year until the first general examination has been passed. Consequently there will be no men carrying on work conditioned in previous courses.

The written part of each general examination will consist of questions selected and arranged by the committee on examinations from lists of questions submitted by the departments concerned. The written test will be divided into two or more periods of three hours each, but there will not be separate examinations on the various courses. The answers to the questions will be graded under the direction of the committee on examinations, not under the direction of a depart-

<sup>2</sup> *Bulletin of American Academy of Medicine*, Vol. XI., No. 6, December, 1910.

ment. Thus in large measure the student is examined not by the man who gave the course. A single question may involve knowledge acquired in the work of several departments, and all questions are to be answered from this broader viewpoint and not from the viewpoint of any particular course. The grade so given on the written part of a general examination will make up 40 per cent. of the final mark for the general examination.

The oral part of each general examination will be conducted by boards of five members appointed by the committee on examinations, on each of which for the first general examination there must be at least one representative of the clinical branches, and for the second general examination at least one representative of the laboratory subjects. The board will determine by conference and vote the grade of the student, and the grade given on the oral part of a general examination will make up 20 per cent. of the final mark of the general examination.

This, then, is the plan for examination which we have voted to adopt. It is, as you see, a very considerable departure from the type of examination generally in vogue in medical schools. Practical examinations are given at present in most of the medical courses at Harvard. These will continue to be given. The present large number of written examinations will be reduced to two, to which are added two oral examinations, both planned to determine the student's comprehension, judgment and power rather than his detailed information. I will not occupy your time with any more minute description of the plan, and I will not enlarge upon what I consider to be its very great merits. We believe it to be a great improvement on our present system, but I will not engage in prophecy as to what it will accomplish; some years hence it can be reported again, and the reporter then will give you a criticism of its practical application with a statement of what modifications actual practise has required in it.

HENRY A. CHRISTIAN

BOSTON

# DR. A. R. WALLACE AND THE UNIVERSITY OF COLORADO

IN the general biology class at the University of Colorado it is customary to give a good deal of attention to the theory of evolution, and to the history of biological science. The class (about 135 students) of this year became much interested in the character and work of Dr. Alfred Russel Wallace, and took the liberty of sending him the following greeting on the occasion of his eighty-ninth birthday:

We, the students in the general biology class at the University of Colorado, ardent admirers of your work on evolution, send you respectful greetings on the occasion of your eighty-ninth birthday, wishing you health and happiness.

To this, Dr. Wallace replied in a letter dated January 12, 1912:

*My dear Young Friends:*

Thank you much for your very kind greetings. I am much pleased that so many of you are readers of my books. The wonders of nature have been the delight and solace of my life. From the day when I first saw a bee-orchis (*Ophrys apifera*) in ignorant astonishment, to my first view of the grand forests of the Amazon; thence to the Malay Archipelago, where every fresh island with its marvellous novelties and beauties was an additional delight—nature has afforded me an ever-increasing rapture, and the attempt to solve some of her myriad problems an ever-growing sense of mystery and awe. And now, in my wild garden and greenhouse, the endless diversities of plant life renew my enjoyments; and the ever-changing pageants of the seasons impress me more than ever in my earlier days.

I sincerely wish you all some of the delight in the mere contemplation of nature's mysteries and beauties which I have enjoyed, and still enjoy.

Yours very truly,

ALFRED R. WALLACE

## HENRY WILSON SPANGLER<sup>1</sup>

IN recording the death, on March 17th, of their friend and associate, Henry Wilson Spangler, Whitney Professor of Dynamical Engineering, the members of the University Faculties feel moved to give expression, how-

<sup>1</sup> Minute adopted by the faculties of the University of Pennsylvania.