

COMBINED PHARMACY AND CLINICAL AND PATHOLOGICAL LABORATORY SCIENCE EDUCATION.*

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Many attempts are being made by our universities to give courses combining arts and science degrees with the courses leading to the degree of Doctor in Medicine. Most of these courses have a cultural aim rather than any idea to prepare the recipient to be extensively qualified in some branch of the arts or the sciences in a manner to coördinate with the major degree.

At the last meeting of the American Conference of Pharmaceutical Faculties a paper was presented describing a combined curriculum in pharmacy and medicine¹ as given at the University of Michigan. This is the only combination course excepting the D.P.H. (Doctor in Public Health) that the writer knows of, with a frankly utilitarian aim to coördinate knowledge in two inter-related branches of medical endeavor.

The various courses offered at this university are briefly:

(1) For the M.D. degree: Two years' arts, four years' medicine. (2) For a B.S. in medicine and the M.D. degree: Two and a half years in literature, arts and science and four years' medicine. (3) For an A.B. and the M.D. degree: Three years' arts and four years' medicine. (4) For an A.B. or B.S. and the M.D. degree: Four years' arts or science and four years' medicine. (5) For a B.S. in pharmacy and the M.D. degree: Three years' pharmacy and four years' medicine.

Theoretically these are all very nice but stern economic and sociologic factors seem to be definitely pointing to the need of a careful re-evaluation of our educational methods as applied to those members of the community who are to alleviate suffering and, as far as it is possible to do so, to prevent and cure the ills of human kind.

Many of our foremost medical educators admit that much of our educational energy at present forced into the channels of medical education is wasted energy as related to at least ninety-five per cent. of the medical students. Cushing² of Harvard University in an address to the 1924 Congress of Medical Education, Medical Licensure, Public Health and Hospitals, states—"In our pursuit of the medical sciences we have lost touch with the art of medical practice, and all the anatomy and physiology and pharmacology in the world is not going to guard a young doctor against making an unnecessary number of diagnostic mistakes and subsequent errors of treatment unless he has been brought face to face with clinical problems and learned sound methods of treatment for an ample time. When he has been thinking in terms of the patient for only two years instead of four, there are so many countless minor conditions—they cannot possibly be mentioned far less shown and demonstrated to every student in the short time at one's disposal. There is much in short, that was taught, and is still taught to-day to students in their

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¹ Edward H. Kraus, *Jour. A. Ph. A.*, 13, p. 353 (April, 1924).

² Harvey Cushing, M.D., "The Clinical Teacher and the Medical Curriculum," *Jour. A. M. A.*, 82, p. 843, (March, 1924).

pre-clinic courses, that is unnecessary and could well enough be omitted, or at least left for their graduate years of study."

The President-Elect¹ of the American Medical Association at the 1924 Convention in his address advocates a shortened course of medical education. He dwells on the economic factors of high cost of medical training in dollars as well as the sociologic factor of years. He also raises the very pertinent question of retaining the degree of Doctor in Medicine to signify one capable of living up to the sociologic significance of that degree.

No real study has, to the writer's knowledge, ever been made to give an explanation of why much of the pre-clinic course of education is apparently wasted energy. I believe if such a study was made, we would find that part of the trouble is taking a class of men and women of a certain temperamental and mental type which leads them to choose the medical vocation and trying to impose upon them a curriculum which is foreign to their aims and capacities. The result is, as many leaders frankly admit, of rather doubtful value.

No mention is made by either of the speakers quoted of the fact that a curriculum crowded with subjects uninteresting to the student is a vicious education as it has all the evils of a quiz cram, parrot memorizing system. It does not develop a power to observe accurately nor to reason in a logical manner. In fact it seems to deprive the young doctor of much of the self-confidence which he should have after six years of college training.

If the advocated changes in methods toward shorter pre-clinic courses should find extensive favor, it would be very unfortunate if no other provision was made to provide adequately for the preservation and extension of the fundamental so-called pre-clinic subjects to preserve their special utilitarian value to society. This is where the pharmacy faculties in universities with general science, pharmacy and medical faculties should take the initiative.

All the courses with the exception of the combined pharmacy and medical education, have a very questionable utilitarian value. It is a question whether the increased time required for the long preparatory period in any way compensates society for the increasing costs for medical service. It is even questionable whether the combined pharmacy and medical courses as outlined by the University of Michigan will accomplish what its advocates aim at. It is more liable to produce a class of physicians which we have fortunately been losing in late years, namely such that place complete reliance on drugs to effect cures to the neglect of common sense hygiene and the various physical and mechanical aids. To return to such a state of affairs will but accentuate the problem of cults by furnishing them with an apparent justification. It will also work an injury to pharmacy and to the use of drugs.

The necessary shortening of the pre-clinic courses will be a detriment to the laboratory branches of service. It is here where the pharmacy faculties have an opportunity to render real service by bringing about a combination of the regular pharmacy education with those of the medical schools to produce qualified laboratory experts.

As a rule the class of students who enter a first-class pharmacy school for

¹ William Allen Pusey, M.D., *Jour. A. M. A.*, 82, p. 1960 (June 14, 1924).

the extended courses are of a temperamental and mental type which makes for success in the tedious work which characterizes most laboratory activities. Likewise the grilling chemistry and related courses as given in the pharmacy schools are more directly applicable to prepare for this type of work than are either the very limited courses given to prepare medical students, or the general courses given in the department of chemistry of many universities.

The experimental physics courses in many university departments of physics are possibly more extensive and satisfactory than those given in the pharmacy department. The general biology course of the university and the experimental pharmacology of the medical department should be a part of the curriculum. None of the pharmacy curriculum should be omitted as it is this which will develop a well-grounded knowledge of laboratory technic.

The bacteriology in many advance courses at colleges of pharmacy will, in general, be superior to those in the department of medicine as they are not as a rule confined to the pathogenic organisms, thereby giving a more extended view of the subject.

The anatomy and dissection courses at the medical school should be a compulsory part of the combination, as should also the normal and the pathological histology, embryology and neurology. However, the time given to these should be much greater than is required of the general medical student. In the writer's experience the courses in normal and in pathological histology were excellent but those in embryology and neurology were entirely inadequate to prepare for a laboratory career.

The physiological chemistry will probably be better in the pharmacy school while clinical pathology and serology will probably be best at the medical school.

This is a combination which those universities requiring six years for the Doctor in Pharmacy should consider. Whether the degrees should be Bachelor of Science in Medicine and Doctor in Pharmacy, or something else, is a subject for the universities to decide. However, it is the opinion of the writer that the degree of Doctor of Medicine should, as far as possible, be restricted to those who are actually qualified to make thorough physical diagnosis and to practice therapeutics. It should not be given for any other purpose as it is liable to lead to confusion. This will tend to prevent the laboratory branches of our hospitals being used as a makeshift by poorly qualified physicians until the opportunity presents itself for them to enter general practice. This, at present, is one of the banes of the laboratory service, as comparatively few medical men take up the service with the serious intention of making it their life's work. The result is that they usually employ it as a stepping stone and never thoroughly qualify or devote their attention to the work.

SUMMARY.

1. The suggested combined pharmacy and clinical laboratory science curriculum is one in which the subjects supplement and fortify each other, leading to a well-rounded understanding of the limitations of the laboratory service both from the technical view and from the medical view.

2. It will produce a group which has an understanding of the pharmaceutical, chemical, physical and clinical laboratory technic, better than is possessed by the medical profession.

3. The group will also possess a better understanding of the limitations of pharmacy, and of therapeutic requirements and principles, than do the present pharmacists.

4. They will by these qualifications contribute to greater progress in rational therapeutics than is at present obtainable.

5. It will afford a possible means of better coördinating pharmacy, the laboratory service and medical practice, thereby improving all three.

6. It will furnish a more satisfactory group of pharmaceutical chemists for teaching and for manufacturing and biological positions.

7. It will place the laboratory service in a distinct class where it will not be subjected to abuse by being utilized as a mere stepping stone to medical practice.

8. It will improve laboratory service by stabilizing it.

9. It will afford better means of establishing efficient hospital service than is at present possible.

CORRESPONDENCE

PHARMACEUTICAL MUSEUMS AND LIBRARIES.

The Editor: In connection with your excellent Editorial Note "The Proposed Museum and Library of the A. Ph. A. Headquarters" on pp. 1175 and 1176, December, 1924, permit me to point out that there is an excellent opportunity to study the pharmaceutical museums and pharmaceutical libraries in Germany, Austria and Switzerland in connection with the American Pharmacists' European Tour during July, August and September of this year.

These countries are noted for their rich pharmaceutical collections dating back many centuries, and from these much may be learned and gathered which can be utilized to good advantage in the "Home of American Pharmacy." The writer, together with his family, will take active part in this European tour. As one having special interest in Historical Pharmacy, I have taken it upon myself to prepare an outline of the most important pharmaceutical museums and libraries in Germany, Austria and Switzerland. These will be visited, studied and described during the tour and especially after the party disbands in Cologne on August 18th. As the time arranged according to the arranged itinerary is necessarily somewhat limited, many of these places will have to be visited afterwards. Such visits will give a mint of information for papers on this subject.

Pharmacists taking an interest in this matter will kindly get in touch with the writer. At any rate, it will be well to take sufficient time for this trip and not return until about the end of September, f. i. leave Hamburg on September 11th by the same S. S. Cleveland. This would also have the advantage of securing the same accommodations both ways.

Yours for deeper pharmaceutical study,

Brooklyn, January 1, 1925.

OTTO RAUBENHEIMER.

SERVICE OF GOVERNMENT BUREAUS.

The U. S. Public Health Service Exhibit at the N. A. R. D. Drug Show was in charge of Dr. A. G. DuMez and Miss Frances Stevens. Drug standardization was the feature of the exhibit, illustrated by charts and bulletins, apparatus, test solutions, indicators, etc.

The Bureau of Standards exhibited weights

and measures, measuring instruments, optical glass; the method of testing clinical thermometers was demonstrated.

The annual report of the Bureau of Plant Industry discusses among many other subjects, concentrated fertilizers, flowers for insect powder, menthol, cedar oil from waste, American saffron, tung oil and chaulmoogra oil.