

THE DEPARTMENT OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

A COMBINED CURRICULUM IN PHARMACY AND MEDICINE.*

BY EDWARD H. KRAUS.

What is considered to be a very important advance in pharmaceutical education has just been made at the University of Michigan by the recent authorization by the Board of Regents of a combined curriculum in pharmacy and medicine. This combined course gives official recognition to another type of preparation for the study of medicine which, we are confident, will appeal to a considerable number of serious minded students who desire a more thorough grounding in chemistry than is offered by the other authorized combined curricula, as well as a comprehensive training and experience in pharmacy. It is hoped that this new program of study will prove especially beneficial to those students of medicine who plan to engage in general practice or who desire to prepare themselves for a career in the research laboratories of our educational, scientific, and medical or pharmaceutical institutions.

Since 1890 the time required of students to complete the course in medicine leading to graduation from the foremost educational institutions of the country with the degree of Doctor of Medicine has been greatly increased. In that year the medical course at Michigan was increased from three to four years of nine months each and at the same time a preparation equivalent to graduation from an approved high school was required for admission. However, in order to encourage students to enter upon the study of medicine with a superior preparation, involving several years of college work, a combination course in Letters and Medicine was also arranged. This combined curriculum permitted students to graduate from both the Arts College and the Medical School in six years.

With the rapid development of the medical sciences which made itself so strongly felt during the next twenty years it soon became evident that at least two years of college training should be demanded as the minimum admission requirement to the study of medicine. Accordingly, in 1909, at this University all prospective students of medicine were required to submit credentials showing that they had completed two full years of study in an Arts College of recognized standing, said instruction to include certain prescribed courses in English, modern foreign language, physics, chemistry, and biology. Thus, the regulation time to obtain the M.D. degree was extended from four to six years beyond the high school.

When the above advanced requirement became effective it was obviously necessary to revise the combined curriculum leading to two degrees, which was introduced in 1890. This was done by arranging two combined courses. One of these requires two and one-half years of work in the College of Literature, Science, and the Arts and four years in the Medical School and leads to the degree of Bachelor of Science in Medicine upon the completion of the first two years in the Medical School, and to the degree of Doctor of Medicine at the completion of the entire

* Submitted by C. B. Jordan, Chairman Executive Committee, A. C. P. F.

curriculum, normally after six and one-half years of study. The second combined course involves seven years of study, three in the Arts College and four in the Medical School, with the granting of the A.B. degree upon the completion of the first year of the Medical School, and of the M.D. degree upon graduation of the same. Naturally, whenever time and money permit students are urged to spend eight years to secure the degree of Doctor of Medicine by taking a full four year course in the Arts College before entering upon the professional work in the Medical School.

Thus, to-day at this University, the following avenues of approach or courses of study may be pursued, at the option of the student, to obtain the degree of Doctor of Medicine:—

1. Two years in the Arts College and four years in the Medical School leading to the degree, M.D. The minimum time required is six years.
2. Two and one-half years at the Arts College and four years in the Medical School, leading to two degrees, B.S. in Medicine and M.D. The time required is ordinarily six and one-half years which may be reduced by summer study to six calendar years.
3. Three years in the Arts College and four in the Medical School, leading to the degrees of A.B. and M.D. The time required is ordinarily seven years.
4. Four years in the Arts College and four in the Medical School, leading to the degrees of B.S. or A.B. and M.D. The time required is eight years.

The development of the educational requirements for the study of medicine at other institutions has been in the main similar to that outlined for the University of Michigan.

During this same period, namely since 1890, the requirements for admission to and graduation from the College of Pharmacy of this University have likewise been rapidly advanced. In 1890 the college course in pharmacy was only two years in length and the requirements for admission were correspondingly meager, the chief emphasis being placed upon practical experience rather than upon educational preparation as evidenced by attendance upon or graduation from high school.

With the growth of manufacturing pharmacy and the rapid development of medicine, already referred to, the demand for better trained pharmacists became so insistent that it was soon necessary to offer superior facilities for the study of pharmacy. Accordingly, in 1896 a four year course was introduced having the same requirements for admission as for the courses leading to the scientific degrees in the Arts College. Also from time to time the educational standards were advanced for the two year course so that since 1912 high school graduation has been required of all students seeking admission to the College of Pharmacy as candidates for degrees. Furthermore, since 1917 the minimum college course has been three years in length. The number of students pursuing the longer four year course, which was first organized in 1896, is constantly increasing.

For a period of years it has been observed that annually a number of students who have been enrolled for several years on the four year course in the College of Pharmacy decided to change from pharmacy to medicine and therefore transferred their credits to the Medical School. In most cases these students had not progressed far enough in the College of Pharmacy to warrant the administrative officers to urge them to finish the course in pharmacy and obtain a degree from the College.

Such students have, however, generally given a splendid account of themselves in the various courses in the Medical School, especially in those involving a knowledge of pharmacy and pharmaceutical practice.

With such students in mind and also with the idea of providing another avenue of approach to the study of medicine primarily in view, a new combined curriculum has been planned based upon a four year course in pharmacy and the regular medical program. Since the instruction in certain subjects, such as bacteriology, hygiene, pharmacology, and physiological chemistry overlap both courses it is possible to reduce the time necessary to meet all the requirements for the two degrees, namely, Bachelor of Science in Pharmacy and Doctor of Medicine, from eight to seven years.

Students desiring to pursue this combined curriculum enroll in the College of Pharmacy and for three years pursue courses under the supervision of that college. After earning 96 hours of credit and at least one and one-third times as many points as hours, these students also enroll in the Medical School provided their work has included the following:

Rhetoric, 6 hours, including courses 1 and 2	Physics, 8 hours
French and German, 16 hours of either one.	Chemistry, 32 or 28 hours
(Each unit of French or German offered in the preparatory work reduces by four hours the requirement in that language. One year of foreign language, however, must be taken in college.)	Zoology, 4 hours
	Botany, 4 hours
	Mathematics, 2 hours
	Pharmacy, 24 hours.

Two units of Latin must have been offered for admission to the College of Pharmacy by all students on this combined curriculum.

The above instruction will ordinarily be distributed as follows:

FIRST YEAR.			
First Semester.	Hours.	Second Semester.	Hours.
General and Inorganic Chemistry	4	General and Inorganic Chemistry	4
Pharmaceutical and Chemical Problems	4	Pharmaceutical Technique and Manufacturing Pharmacy	4
Rhetoric I	3	Rhetoric II	3
French or German I	4	French or German II	4
		Mathematics	2
SECOND YEAR.			
First Semester.	Hours.	Second Semester.	Hours.
Qualitative Analysis	5	Quantitative Analysis	5
General Physics I	4	General Physics II	4
French or German III	4	French or German IV	4
Principles of Animal Biology	4	Theoretical and Physical Chemistry	4
THIRD YEAR.			
First Semester.	Hours.	Second Semester.	Hours.
Organic Chemistry	5	Organic Chemistry	5
Prescription Study and Practice	3	Pharmacognosy	5
Elements of Botany	4	U. S. Pharmacopœia and National Formulary	4
Pharmaceutical Chemistry	3	Electives	
History of Pharmacy	1		

The instruction during the first three years has been planned so as to give the student an adequate training in pharmacy and at the same time meet all the requirements demanded for admission to the study of medicine. Double registration, that is, in the College of Pharmacy and in the Medical School, is effective during the fourth and fifth years. During this period the students pursue courses in anatomy, bacteriology, clinical microscopy, hygiene and public health, histology, pharmacology, physiological chemistry, and physiology, all of which are given in the Medical School. After the completion of these courses, normally at the end of the fifth year, the degree of Bachelor of Science in Pharmacy will be conferred. Thereafter the student enrolls only in the Medical School and two years later should be ready for graduation with the degree of Doctor of Medicine.

The new program will become effective at once. At the beginning the number of prospective students of medicine pursuing this combined course will probably not be very large. It is, however, believed that when the advantages of the kind of preparation for the study of medicine offered by this well balanced program of study under the supervision of the College of Pharmacy becomes more fully appreciated, this new combined curriculum will attract an increasing proportion of the students preparing to study medicine at this University. Naturally it will take a decade or more to determine whether or not the new program is superior to the older combined curricula. The members of the faculty of the College of Pharmacy are, however, confident that time will fully justify their faith in the new curriculum. They believe that a distinct step forward has been taken toward bringing pharmacy and medicine closer together, which relationship should prove mutually beneficial.

COLLEGE OF PHARMACY,
UNIVERSITY OF MICHIGAN,
MARCH 1, 1924.

"MENTAL AND SPIRITUAL HEALING."

An account of a "Benjamin Franklin Fund" of London appeared in the press several months ago; also reports in print and otherwise of a book on "Mental and Spiritual Healing" for which an award from the above fund had been made to Pierson W. Banning. Under "Propaganda for Reform," p. 1063, *Journal A. M. A.*, March 27, 1924, the book is reviewed. The concluding paragraph expresses the opinion that the so-called Benjamin Franklin Fund does not exist, and that the award is a hoax.

ATTEMPT TO STEAL THE INTERNATIONAL STANDARD METER.

According to Paris despatches an attempt to steal the international standard meter, on February 28th, was foiled. The bureau houses, in addition to the Standard Meter, a number of delicate instruments and standards, all made of platinum, iridium or other valuable metals.

ONTARIO COLLEGE OF PHARMACY CANCELS LICENSE OF A GRADUATE.

The Ontario College of Pharmacy has cancelled the license of a Toronto druggist who has been twice convicted of selling liquor in violation of the law which provides that on a second conviction the offender shall be deprived of his license for two years. During this time he is prohibited from selling drugs in his own name, managing a drug store or becoming associated with any company dealing in drugs.

LICENSES REVOKED BY TEXAS BOARD OF PHARMACY.

Licenses of two registered pharmacists of the State were revoked at an executive meeting of the Texas State Board of Pharmacy. One of the druggists was charged with "gross misconduct," while the other was charged with violation of the Harrison narcotic act and is, at the present time, serving a sentence in Leavenworth penitentiary.