

SECTION ON EDUCATION AND LEGISLATION

ARE COLLEGES OF PHARMACY DEVOTING SUFFICIENT TIME TO DISPENSING?*

BY ARTHUR W. LINTON.

The Pharmaceutical Syllabus defines Dispensing Pharmacy as "the extempore preparation or compounding of medicine." The Syllabus states that "the minimum time devoted to this subject shall be sixty hours, which should be arranged to give a liberal number of hours for actual work in the compounding of prescriptions." It should be noted that according to the outline of the Syllabus many of the classes of extemporaneous preparations, such as ointments, plasters, and suppositories, have been taken up in the second year's work in manufacturing or galenical pharmacy, and typical preparations of each of these classes made by the student before he meets them in actual prescriptions. Furthermore, the Syllabus provides for a twenty-five hour course in Pharmaceutical Latin entirely aside from the dispensing course.

For the purposes of this paper let there be understood by Dispensing Pharmacy the extemporaneous preparation of medicine, including the study of such classes as pills, powders, and ointments; the consideration of the written prescription; the study of the great subject of incompatibilities; and the actual practice in dispensing physicians' prescriptions in the college laboratory.

The writer has devoted considerable time to study of the catalogues of the colleges of pharmacy of the United States with the view of learning how much time is set aside in the curriculum of the average school to the subject of dispensing. Several difficulties presented themselves in securing the desired information. It was found that a great many of the catalogues were exceedingly indefinite in their statements as to amount of time devoted in class-room and laboratory to prescription work. In some cases rather extravagant statements were made in regard to completeness of equipment and thoroughness of the course, but the reader was left absolutely in ignorance as to the number of hours per week given to the work, as well as to the number of weeks through which the instruction continued.

Another difficulty in making a fair comparison of the colleges in this matter was the great diversity in arrangement and grouping of the work. In some schools, for instance, the study of the classes of preparations commonly dispensed extemporaneously is first taken up in manufacturing courses, in other colleges the student apparently meets these for the first time in his dispensing course. In some institutions the curriculum provides a separate course in Pharmaceutical Latin, while in others whatever instruction in Latin is given is included in the dispensing courses.

Twenty or more colleges were found to make quite definite statements in their catalogues as to the time assigned to dispensing. It may be noted that most

* Read before the joint session of the Section on Education and Legislation, A. Ph. A., the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, Indianapolis meeting, 1917.

of these are members of the American Conference of Pharmaceutical Faculties. Some of those making definite statements offer one course consisting of lectures and recitations and another of laboratory work; others combine lectures, quiz, and laboratory practice in one course. This is a minor matter; it makes little difference under what classification the work is given so long as it is given in sufficient amount and with proper thoroughness.

In regard to the amount of work in dispensing, it was found that among those colleges making reasonably complete statements there was quite a wide difference in time assigned. One college, so far as could be learned from its announcement, devoted only 32 hours to dispensing; at least three institutions were well above 200 hours. The average time devoted to lecture and class-room work in these twenty colleges is not far from 36 hours, the average time to laboratory about 72 hours. Among those colleges stating the value of their dispensing courses in terms of university hours of credit, the average was about five hours. Many at least of the twenty or more schools referred to above also include extemporaneous preparations in their manufacturing courses. If 108 hours, or thereabouts, is the average for those colleges making definite statements in regard to dispensing, it does not seem probable that the time given by other institutions will average higher.

It will be noted, then, that many of our American colleges of pharmacy are using for instruction in dispensing almost twice the minimum number of hours suggested by the Syllabus. Judged by this standard, these schools are doing all that could be expected. However, the writer is convinced that even 108 hours is considerably less than the time required to give adequate instruction in regard to the prescription and all that pertains to it.

Shall we consider first the class-room instruction, or what may be called the theoretical part of the work? The writer, from his own experience and observation, believes that this should include not less than 72 hours. He would suggest a course of one semester of 18 weeks, two hours per week, given to the study of the written prescription in all of its aspects, and to the various classes of extemporaneous preparations. Even if the student has studied these classes and made some typical members of each in previous courses, his knowledge of them at this time is usually quite elementary. Ample time is necessary for detailed consideration of special cases. The instructor may use a part of the time of this course for lectures, but a standard text-book on dispensing should be in the hands of the students, lessons be assigned for study, and much time allowed for quiz and discussion.

During the following semester 36 hours of class-room work should be devoted largely to the subject of incompatibilities. After a consideration of the general subject and of the various classes, the incompatibilities of the principal chemical groups should be taken up systematically. These should be illustrated by numerous prescriptions, which, if possible, should be thrown upon a screen for comment. A part of the time of this semester should be reserved for the more important of the newer remedies, with suitable discussion of their composition, physical and chemical properties, and incompatibilities.

The laboratory work in dispensing should run concurrently with the class-

room work. Following closely on the discussion of each class of preparations in lecture and quiz, this class should be taken up in the laboratory and numerous typical prescriptions of the class dispensed. Using ointments as an example; there should be prescriptions illustrating the incorporation of an insoluble powder, of a water-soluble solid, of an oil-soluble solid, and of a soft extract; ointments made with various bases and combinations of bases; ointments made by mechanical incorporation and ointments requiring fusion; ointments that can best be prepared on a slab, and ointments requiring levigation in a mortar; ointments dispensed in jars, and ointments dispensed in collapsible tubes. At least twelve or fifteen ointment prescriptions should be dispensed to cover these various cases. Some time can be profitably spent in the microscopical examination of samples of the ointments prepared, in order that knowledge may be gained of the efficiency of various methods. All of this will require time. If the prescriptions are so chosen that each one presents some new problem or difficulty to the student, he can not be expected to compound them with the speed of an experienced dispenser. He should be required to label and wrap each prescription as in actual practice. For this semester's work he should have not less than four hours per week in the laboratory, or a total of 72 laboratory hours.

During the second semester, while the subject of incompatibilities is being taken up in lecture and quiz, a great many of the prescriptions dispensed should be chosen to illustrate the principles discussed. The student will need time to experiment with different methods of overcoming certain difficulties. In some cases it will be profitable for him to compound a prescription by two or three different methods in order to compare results. Many prescriptions should be set aside and observations taken at intervals in order that color changes and precipitations may be noted if such occur. Of course it will be quite impossible for the student to experiment with all of the possible incompatibilities, but it is only by doing a large amount of such work that his resourcefulness is developed and he becomes fitted to cope successfully with the innumerable difficulties which arise at the dispensing counter. During this semester the student should be encouraged to bring in difficult or unusual prescriptions received in the store in which he is or has been employed, and should be given opportunity to experiment with methods of compounding the same under the advice of the instructor.

The prescriptions assigned during the second semester should include many of the important new remedies. The various organic compounds of silver, for example, present their own peculiar problems, and some of these compounds are very commonly prescribed. The subject of sterilization is assuming such tremendous importance that no dispensing course is complete which does not devote considerable time to it. Can anything less than 72 hours of laboratory work be considered sufficient for the second semester's course in dispensing? We would suggest, therefore, 72 hours of class-room work and 144 hours of laboratory practice, or a total of 216 hours, as the minimum time for dispensing work in the college course.

Some one objects: "Oh, it is impossible in the college prescription work to familiarize the student with all of the difficulties which may arise, we can teach him only the broad principles." Quite true. The writer is perfectly aware

that if all of the time of a two-year course were devoted to prescription practice, so infinite is the variety of possible combinations, that even then the young pharmacist would probably encounter in his first week of store experience something new and puzzling. No matter how long the school course or how extensive one's practical experience, it is only by reasoning out each new difficulty as it arises that one becomes a safe and successful dispenser. However, the college instruction in dispensing should be sufficiently extensive to familiarize the student with most of the typical cases, and, furthermore, to give the embryo pharmacist confidence in his own ability. Let a student make two or three emulsions, and it is quite probable that he will go out regarding emulsions as an unfamiliar and a treacherous class of preparations. If he happens to encounter an emulsion prescription somewhat different from those he dispensed at school, he is afraid of it, and will probably make a failure in compounding. Let him dispense enough emulsions in the school laboratory to come to a thorough understanding of the principles of emulsification, and he will receive emulsion prescriptions with confidence and even with pleasure, for what is of more satisfaction to the pharmacist than to dispense a well-made emulsion?

Doubtless one of the reasons that more time has not been devoted to prescription laboratory work in our colleges is the high cost of this instruction. The laboratory equipment, if at all adequate, is expensive. The cost of material used, if representative prescriptions are assigned, is considerable. Further, if the class is divided into small groups, as it should be for this kind of work, a great deal of the instructor's time is consumed. Hence the tendency has been to use most of the student's laboratory time in courses which required less expensive equipment and material, and in which the instructor can oversee the work of a larger group of students. Let us hope that the condition which has almost necessitated the neglect of so important a part of the curriculum will be gradually overcome. State authorities and legislative bodies will slowly come to understand that instruction in pharmacy, as in medicine, is expensive, and will become willing to provide the funds necessary for equipment and instruction. Institutions not under state control will find other means of adding to their incomes.

Another reason that dispensing work has been somewhat neglected is the difficulty of finding time in the crowded curriculum of the two-year course for all that should be done. While the writer is inclined to believe that a small amount of the time now commonly given to chemistry might better be devoted to prescription work, he will not contest this point, for it is quite certain that our students are not giving too much time to chemistry. Qualitative analysis, especially, is a splendid preparation for the study of incompatibilities. It is by the extension of the pharmacy course to three years that we must hope to find the additional time so urgently needed for a proper study of the prescription and a reasonable amount of practice in dispensing. The writer would urge upon those faculties which are introducing a three-year course the serious consideration of assigning more time to prescription work than was possible in the two-year course.

We will all agree that in compounding physicians' prescriptions "just right," the pharmacist is rendering to the public one of the highest services which comes within his sphere of activity. Why, then, should the preparation for dispensing

not be given a more prominent place in the education of the pharmacist? More emphasis on this work in our colleges, better equipment and adequate time for instruction, will mean that our college graduates will be better prescriptionists. It will mean more young pharmacists entering business with the determination that no matter what side-lines may be introduced, their stores will be prescription stores. Better prescription service will certainly mean more prescriptions written; it will go far to correct the omnipresent evil of the dispensing doctor. The writer believes that as pharmacists, whether practitioners or teachers, we should spend less time in bewailing the fact that physicians are not writing prescriptions, and more time in preparing ourselves to give dispensing service of the highest possible order.

Let all recognition be given by our colleges to the commercial aspects of pharmacy. Let courses in commercial pharmacy, store-management, drug-store accounting, and show-card writing be introduced and strengthened. The three-year course should give time for these also. But let us not neglect to provide for more instruction and better instruction in dispensing.

UNIVERSITY OF WASHINGTON,
COLLEGE OF PHARMACY.

PRIVATELY OWNED SCHOOLS AND COLLEGES OF PHARMACY.*

BY EDWARD SPEASE.

This subject is similar to one upon which I offered a paper one year ago. My paper at that time was either too insignificant to merit recognition, or every one endorsed my opinions. I can hardly credit the latter statement as being a fact, and so must content myself with the former one, and try again.

I am not trying to find fault with the views of other people—many of whom have had many more years of experience in educating pharmacists than have I—but as I gain age and experience, the questions present themselves to me—Is pharmacy worth while? and, Does every class of pharmacists make the proper unselfish effort to build up pharmacy? and, Are they all proud of the profession they have chosen?

I ask myself, Why is the pharmacist often a man of small vision? Is it his multitude of small sales that makes him so? Why do the majority of pharmacists—and often now, the layman—make the statement: "Ethical pharmacy is a thing of the past; I must develop the commercial side of my store." By the commercial side is meant, I suppose, the patent medicine business, sundries, cigars, candy, etc., as well as the various lines of preparations put up by various pharmaceutical houses whose sale has made some of these manufacturers immensely wealthy.

The tendency, generally speaking, or at least in the majority of cases, is to draw away from prescription work and the manufacture of our own preparations

* Read before the joint session of the Section on Education and Legislation, A. Ph. A., the American Conference of Pharmaceutical Faculties, and the National Association of Boards of Pharmacy, Indianapolis meeting, 1917.