

In its essentials, a course such as the one briefly outlined here is a combined academic and professional course, such as is usually completed in five college years of eight months each. The hospital year is approximately eleven and one-half months. By utilizing the summer months to work off the requirements in practical experience it should be possible to reduce the total length of the course to four calendar years. It would seem advisable, however, to limit the credit allowed for practical experience to that amount which the requirements of the position would justify. This, in all probability, would not be more than one-fourth of the total credit hours required for the degree.

It is possible that this amount of college training may be deemed excessive by a good many pharmacists. For the benefit of these, attention is directed to the fact that the educational requirements outlined herein are equal to no more than two-thirds, at most, of those now required of the professional men with whom the hospital pharmacist works, and that they are but little more than equal to those required in the university nursing schools.

TEACHING IN THE HOSPITAL PHARMACY.*

BY CLARISSA M. ROEHR.¹

The modern hospital is built to serve mankind—to alleviate pain, to cure disease, and should not be considered a commercial enterprise. A spirit of co-operation should permeate the institution. The very nature of medical work calls for the highest the worker can give. It matters little whether the hospital is connected with a college of medicine—the same opportunities exist from a teaching viewpoint. The size of the hospital would naturally affect the amount of work. The financial phase should always be kept second to that of helpfulness.

It is the purpose of this paper to briefly outline the work in a hospital pharmacy, and to suggest the possibilities such work would show in the teaching of students.

The work is systematically divided into three sections; namely, manufacturing or laboratory, dispensing and administrative.

The laboratory of the hospital pharmacy must be spacious and well lighted. Supervision of students in the laboratory is a responsible task as the preparations are made in large quantities and are afterward used in the various wards and clinics. In the laboratory of a college such small quantities are made, often lacking in uniformity, that the work seems impractical. As medicine and pharmacy are both expensive branches, continued practical experience, even after graduation, is the only solution for complete training. It is not my intention to criticize college laboratory work but rather to suggest supplementary practice.

The average hospital could furnish full time employment to not more than two workers, and a supervising pharmacist could look after scarcely more than five students. Student workers should be compelled to show high school graduation and preferably graduation from a recognized school of pharmacy before seeking employment in a hospital pharmacy. It is a question whether a student should be encouraged to seek experience before his college course or whether the practical

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¹ Chief Pharmacist University of California Hospital.

work should follow. If one, contemplating the study of pharmacy, has the opportunity to work in a hospital pharmacy, then he has the chance to know little of the practical side of his future work.

The size of the institution, the scope of the work, the wholehearted interest of the supervising pharmacist, the coöperation of the hospital administrative staff—all will have an important bearing on the amount of teaching that can be accomplished by the hospital pharmacy.

The tools of the workman are very important. Therefore the pharmacist will be seriously handicapped if his laboratory lacks equipment. As a rule, the institution will gladly furnish the necessary equipment, for it is a comparatively easy matter to show that the apparatus will pay for itself in a short time. Our apparatus for preparing Dakin's solution, though seemingly an expense at first, has paid for itself over and over again. Likewise our ointment machine, capsule-filling machine, our triturate mould, our electric oven, our blast flame all are essential and the purchase of them has been an economy. Flasks, beakers, evaporating dishes, burettes, pipettes, one- and ten-cc syringes for ampul work, hydrometers, granite-ware utensils, all these are necessary to carry on regular work.

An inexperienced worker should be shown the correct methods of manufacturing—the desire to make a preparation absolutely correct should be the aim—and he should be given the best equipment the institution can afford. An experienced worker is better able to devise extemporaneous methods. As the student advances a desire for research work should be encouraged.

Many students are prone to belittle the value of manufacturing; the average "druggist" prepares very few of his preparations. I believe that there always will be work for the laboratory pharmacist who will coöperate with the research medical man in solving his problems. In rural districts where the pharmacist must depend on his own stock, he often can economize by turning some into pills, tablets, or tinctures, provided he has the technic and the apparatus.

The University Pharmacy also uses homeopathic preparations and this gives the student an opportunity to become familiar with homeopathic practice.

After the student has gained a certain degree of proficiency in the laboratory he advances to the dispensing room. Often dispensing seems very simple, sometimes only pouring out 120 cc of elixir of sodium bromide, 250 cc Dobell's solution, and it is simple, if the dispenser has had the proper laboratory training. It is imperative that he knows the ingredients of these preparations and the nature of the medicines he is handling. The chief pharmacist must supervise all of the work. Containers are checked, then put in place. Even in the filling of ward supplies, the containers are not put away until the work is fairly completed. The counters look a bit crowded but it gives me a chance to see what has been taken out, and any mistake can be rectified quickly. One disadvantage in our dispensing is the speed with which we are compelled to work. A student should never be rushed in his prescription work.

Administrative work comes last and consists of reports to executive officers—covering the personnel of the department, arrangement of the work, adjusting complaints, stock records, price cards and system of pricing, formula card index, business correspondence and suggestions for general improvement. This division

of the work should take care of the financial standing of the pharmacy, and the office, which connects with the dispensing room, should contain files, reference books, pharmaceutical journals, a desk and a typewriter.

Just as the hospital pharmacy can be helpful to the pharmacy student, so it can also be of service to the student in medicine. The two lines of study should work hand in hand—each one with its own problems—but these more easily solved by coöperative effort.

Some six weeks ago one of the medical students brought his freshly dried, California-grown digitalis leaves to us to make a tincture so he could test them physiologically. In fact he did the work under our supervision and it occurred to me that a little practical pharmacy would be useful to every medical student. However, it is a waste of time if the student shows no enthusiasm in his work.

With the community in general, teaching can also be accomplished. This requires the greatest diplomacy and tact for we deal with irritable people, people who are ill. We try to teach the people that medicines should be refilled only when ordered to be refilled by their physician, that judgment should be used in the giving of medicines—a medicine that has helped you may not be the correct one for your neighbor. The university hospital has rules on these points and we follow them implicitly. The patients are always referred to the physician before the prescription is refilled.

To sum up—the pharmacy of a hospital is a good place to teach correct principles of pharmacy. This teaching can be made to help not only the student in pharmacy, but also the student in medicine, and indirectly the general community.

THE STATUS OF CLINICAL SERVICE AS A PHASE OF PHARMACEUTICAL SERVICE.*

BY JOHN C. KRANTZ, JR.

During the past decade the pharmacists of this country have watched with increasing curiosity the ever-growing commercial phases of the retail drug store. To those pharmacists who are inclined to like the buying and selling of merchandise rather than the filling of physicians' prescriptions, this metamorphosis of the drug store was rather agreeable and profitable. However, to the college-trained, profession-loving pharmacist, this condition not only discouraged his hope for an ethical pharmacy but seemed to defeat the very purpose of his professional education.

In more recent years, especially since the close of the great war, men have not entered professional schools in a haphazard and careless manner, but they now carefully consider the outlet for the product the school produces and how, having once obtained the education, it can best be used to serve his fellow-man and sustain his own livelihood. In pharmaceutical training this presented a singular problem: was the embryonic pharmacist to spend his money and time in college to receive a professional education and then to expend ninety-three percent of his after-life doing commercial work? However, the large majority are still con-

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