

taught to the pharmacy student in the school of pharmacy and by an instructor who has graduated in pharmacy. Such an individual is in a position to know the exact needs of the student and can supply those needs to the furtherance and betterment of the student's education.

WHAT THE DEPARTMENT OF PHARMACY EXPECTS OF THE
DEPARTMENT OF CHEMISTRY.

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“Blessed is he who expects nothing
for he shall never be disappointed.”

It must have been these words of Alexander Pope, written in 1727 in a letter to Gay, which inspired the answer of my friend, a teacher of Pharmacy, to my question, “What do you expect of the Chemistry Department?” He replied, pessimistically, “I expect nothing, so that anything I get will be better than I expected.” However, this is not the unanimous answer to the question. Far from it. Another Pharmacy teacher replied, “I expect much of our Department of Chemistry and it always more than meets my expectations.” Thus we find the two extremes and doubtless the true answer lies between them.

Realizing the difficulty in obtaining an accurate consensus of opinion on the subject of this paper, I decided to render my own opinion on it and, thereby, provide material for criticism and discussion in this Conference. In order that you may “read between the lines” more readily, I will state that my opinion is based on some twenty years of experience in Departments of Pharmacy, several of these years in an executive capacity, and on a recent study which I have made in the field of pharmaceutical curriculum construction. I am bringing to you who are teachers of Chemistry, therefore, the opinion of one who lives on the pharmaceutical side of the fence, if there is a fence between the two departments (which I doubt).

The expectations of the Pharmacy Department with respect to the Department of Chemistry, may be classified in two divisions—those which are more general and might apply properly between any two departments, and those which are specifically applicable to these particular departments of our discussion. I shall speak of the general expectations first.

The Department of Pharmacy, first of all, expects the Department of Chemistry to cooperate actively with it in doing everything possible for the present and future welfare of the student who is being educated and trained for the practice of some phase of Pharmacy. I purposely emphasize the welfare of the individual student—the individual Pharmacy student, because his interest should be the paramount interest of the two departments. His success in his chosen work is perhaps an approximate measure of the quality of the instruction he receives.

When a student enrolls in a college of Pharmacy, he does so, I believe, with the feeling that his curriculum is one that has been carefully constructed and coordinated for the purpose of preparing him for the practice of pharmacy. He has no reason to suspect that any department with which he comes in contact in his

* Creighton University, Omaha, Nebr., 1933.

training shall consider him as a necessary nuisance. Nor does he anticipate that a department shall consider his application of its subject to Pharmacy any less inspiring, any less dignified, and less contributive to the public well-being, than the same subject as applied by students in Engineering, in Dentistry or in Medicine. To him there are no barriers between departments; they are all working together to educate and train him to become a successful pharmacist. The college catalogs and bulletins support him in this belief. And this is as it should be. However, this fine assumption will be dispelled very quickly unless there is active coöperation between departments.

A sympathetic consideration of the chemical problems of the pharmacy student, an inculcation of respect for the pharmaceutical applications of Chemistry, an evident recognition of the close relationship of Chemistry and Pharmacy—these constitute an important part of what I mean by active coöperation between the two departments.

In the matter of character training, the Department of Chemistry is in a strategic position. In the curricula of nearly all of the colleges, more time is devoted to laboratory work in Chemistry during the first year than to any other subject. This offers a real opportunity to the Department of Chemistry to establish rules of procedure in the laboratory which will train the student in those high ranking traits, or characteristics, of cleanliness, neatness, business-like attitude, accuracy, promptness and confidence in one's own work. I have found that when the development of these traits is emphasized in the work of the student during the first year in the Department of Chemistry, the procedure in the laboratories of the Department of Pharmacy during subsequent years is highly satisfactory to the student and to his instructors. On the other hand, if at the beginning of his laboratory work the student is allowed to be slovenly, to be inaccurate in his measurements, to use poor technique in manipulations, and to rely on his neighbors for confirmation of his results, his progress in the laboratories of the Department of Pharmacy is likely to be a stormy one. It is, of course, the old story of getting a good start and it falls to the lot of the Department of Chemistry to start Pharmacy students in their laboratory careers. For this reason, the Department of Pharmacy expects the Department of Chemistry to have established a routine procedure in its laboratories which shall aid in the development of those traits mentioned which are so essential to the success of the practicing pharmacist.

The final expectation of a general nature which I shall mention is one which is so obvious that it sometimes suffers neglect. The Department of Pharmacy expects the Department of Chemistry to employ educational principles which result in true learning on the part of the student. Herding large numbers of students gathered from all quarters of the campus into an auditorium to listen to lectures of a learned man whose chief interest is not in his lectures, or into a laboratory supervised only by students, is not, in my opinion, employing such principles. Sound pedagogy in all departments is the rightful expectation of the student; educational procedure which results in true learning is the rightful assumption of each department of the others.

Now, turning to some specific points of information and skill which are expected to have been developed by the Chemistry Department, I have made diagrams indicating the general plan of the courses in the departments of Chemistry

and Pharmacy in our College. You may not agree with the particular nomenclature used or with the sequence indicated, but such divergence of opinion will not affect this discussion. What I wish to demonstrate is the dependence of courses in the Department of Pharmacy on courses in the Department of Chemistry. Granting this dependence, one must admit that the Department of Pharmacy logically expects certain information and skill derived by the student from his courses in the Department of Chemistry.

It is brought out rather forcibly from these diagrams that the Department of Pharmacy draws heavily from the Department of Chemistry for specific points of information and skill. As an example, in dispensing a solution of silver nitrate, much of the necessary information comes from the course in General Inorganic Chemistry. Again, in preparing prescriptions containing acetylsalicylic acid, the information is drawn from the course in Organic Chemistry. Likewise, in manufacturing preparations of bismuth, much of the information is drawn from Analytical Chemistry both Qualitative and Quantitative. And so, on and on, such simple examples of the reliance of the Pharmacy Department on the information furnished the student by the Chemistry Department are typical, while many more complex examples could be given, such as the "adjustment of solutions," where, in dispensing, some definite information and skill involving Chemistry is very necessary for solving the particular dispensing problem.

Because of the limited time at my disposal, it is not my purpose to indicate the specific information and skill expected of the Chemistry Department by the Department of Pharmacy, but, rather, to bring to your attention that which you all know but to which, possibly, you have not given much thought—the great responsibility which the Department of Pharmacy places on the Department of Chemistry.

In conclusion, then, I shall summarize this brief expression of my opinion of what the Department of Pharmacy expects of the Department of Chemistry as follows:

1. An active coöperation with the Department of Pharmacy for the ultimate benefit of the student.
2. The development of those traits in the student which have been found to be so essential to the success of the practicing pharmacist.
3. Teaching technique of a high order which results in true learning.
4. A fund of basic principles, specific information and skill inculcated in the student for application in the courses of the Department of Pharmacy.

I realize that I have placed my expectations high but my experience has indicated the possibility of their fulfilment.

I salute the Department of Chemistry as the foundation upon which the Department of Pharmacy has been enabled to build its towers of progress.

A. Ph. A. Resolution No. 13. Official Recognition of the Pharmaceutical Syllabus.

Resolved, that we express our appreciation of the work of the National Pharmaceutical Syllabus Committee culminating in the publication of the Syllabus for the four-year course in pharmacy and that we concur in the recommendation of Chairman J. G. Beard of the Syllabus Committee to the effect that the Syllabus be given official recognition by colleges and boards of pharmacy.