Microscopy and Colleges of Pharmacy.

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Query No 15. What should be the minimum limit of knowledge in microscopy before being permitted to graduate?

A person who has been graduated in pharmacy from an American college is generally and very justly considered a competent party to conduct a retail drug store in any section of of the United States. He, or she, is looked upon as one possessing the maximum amount of professional knowledge that we have a right to expect of a person discharging the responsible duties of a pharmacist. The trend of the times is for us to seek among the graduates for the examples of higher pharmaceutical education and exceptional technical skill.

Those interested in the progressive colleges of pharmacy, managed by earnest educators and wide-awake business directors, will realize the proper purview of the work before them, and see that the students are taught all that is consistent with the demands and conditions of pharmacy as it exists to-day. The pertinent question is not how little instruction can we give our students and have them pass muster as "Ph. G.'s." Those who are ready to sponsor the education of colleges of pharmacy students must give a practical answer to the interrogative, "What is the limit of requirements to which we can extend our curriculum of study?"

With such an understanding of the intent and purpose of modern pharmaceutical education, the query, "What should be the minimum limit of knowledge in microscopy before being permitted to graduate ?" might be resolved into the following: "How much information in microscopy should be made obligatory in a college of pharmacy to enable the graduate to utilize the microscope in his business?"

Before considering an answer to the above query, allow me to to say that by microscopy in this connection I understand a study of the instrument and a practical knowledge of its application in pharmacy. The value of the microscope to the pharmacist depends upon its use in studying drugs for the purpose of identification or determination of purity. To this must be added the microscopical examination of urine, sputum, and other work for physicians

In order to become proficient in the above subject, the student must be taught the principles of optics and shown their application to the microscope. This instruction can be followed by a study of the mechanism of the various styles of microscopes and a practical drill in the manipulation of the instrument. Such instructions will prove of great value when the student desires to select a microscope from the many kinds on the market

The preliminary preparation of substance for examination should be so thoroughly taught that the student will, after graduation, experience no difficulty in deciding how to treat a substance for examination as soon as he determines its nature. As an example, he should learn why some objects are examined dry, others moistened with water, glycerin, oil, or some other mounting medium. The work of sectioning vegetable, animal and mineral specimens requires study and experience. The principles, at least, should be given the student. The use of stains is of sufficient importance to demand special instruction and numerous demonstrations. The recognition of the more common urinary sediments and a demonstration of the bacillus tuberculosis demand a place in the pharmacist's course in microscopy.

The study of vegetable histology should be carried on to such an extent that all tissues and the more characteristic of the common drugs are readily recognized by the student:

The teaching of microscopy in a college of pharmacy may be confined to laboratory instruction or divided between a series of lectures and a course in manual work. In either event, the students must receive didactic information. I prefer to separate the lectures and the laboratory drill.

The amount of time which a college of pharmacy student should devote to the subject of microscopy as a special branch, depends upon the extent to which he is drilled in the application of microscopy in the study of botany, chemistry and pharmacy, by those in charge of these respective departments. I find so little uniformity in the division of labor among the teachers in the various colleges of pharmacy, that I hesitate to affirm a rule for this work.

As a short and succinct response to the interrogation made by the Committee, I should say, "Require of every applicant for graduation a thorough knowledge of microscopical technology, and sufficient learning in the application of microscopy to pharmacy, that he may be able to test all medicines suitable for microscopical examination, inspect food stuffs, etc., for the public, and perform such microscopical work as the physician may request of him."

Anent this subject, I must refer to a detailed exposition of the home study of microscopy by pharmacists, which will be found in the paper entitled, "A Synopsis of a Course in Microscopy for Pharmacists," which I contributed to the 1890 meeting of this Association. The article appears on page 252 of Volume