

over its future, in dispersing has exhibited a silver lining which has cheered its friends and confounded its enemies. The College has no right to suffer for the personal interests of anyone and we are firmly convinced never will.

The advertising which the College recently received, though not of a purely educational nature, has doubtless done good, in that it aroused widespread interest, and caused its standing and mode of imparting instruction to become better known. The very reasonable charges for board and lodging in Toronto, which are less than half that charged in American cities where good colleges exist, coupled with the moderate charges for sessional instruction, which is designed to be of a thoroughly scientific and practical nature, will serve to prove an attraction to students and maintain a continuous large attendance. The very valuable announcement which is issued from time to time, and which we believe to be the best medium for explaining what is taught for the money charged, and of enabling kindred institutions to judge fairly of the qualifications our graduates are likely to possess, will also show that we are up with the times and are not afraid to let it be known.

We have no reason to be ashamed of the progress our College has made in the past, but now, with increased facilities and a larger staff, we want to be proud of the work done and the workmen turned out. A good start has been made and we sincerely hope the course, when completed, will insure a good finish.

ALPHA.

A Course in Microscopical Technology for Colleges of Pharmacy.

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THE past few years have witnessed an appreciable growth in the use of the microscope in drug stores. The Colleges of pharmacy have not been slow to realize the situation, for we find that microscopy constitutes a part of the curriculum in nearly all of the teaching Colleges of pharmacy. Judging from the information given in the various annual catalogues, there exists quite a diversity of plans for instructing pharmaceutical students in the use of the microscope. The following outline is given, not as the only serviceable plan, but as one which has proven of value in the past. Like all systems for education in special branches of study, it is not perfect, and I hope that discussion may follow this paper and result in adding to the efficiency of the plan. I believe that the instructions in microscopy at a college of pharmacy should not be confined to strictly pharmaceutical microscopy, but should give such information as will enable the student to manipulate

the instrument in any other vocation of life.

In order to base the knowledge of microscopy on a solid scientific foundation it is essential that the students have an understanding of the principle of optics that apply to microscopy. A special lecture on this subject, illustrated with blackboard drawings or stereopticon views, is far more valuable than book study. In fact, I find but little use for text books in teaching microscopy.

Following the lecture on optics should come one of practice with the simple microscope. This will initiate the students into the mysteries of magnified objects, and teach them to appreciate the relation between objects as seen by the naked eye and those that are magnified. Several kinds of simple microscopes should be used.

Next comes the compound microscope. As a physician studies the anatomy and physiology of the human body, so should the student be taught the anatomy and physiology of the microscope. The stand with a consideration of its various parts is first in order. Then follows the optical apparatus.

It is essential to teach the students how to sit at the table, and how to place the instrument so that the most work can be accomplished with the least discomfort. Habits must be formed early in the practice.

Only low powers are suitable for the first lessons. The use of transmitted light can be followed by reflected light.

Never give the students very small or unfamiliar objects until they have complete control of the instrument, and realize the relation of object and image. This is the time to teach the desirability of examining objects by both reflected and transmitted light.

The measuring of magnified objects is next in order. This serves to fix the real value of an instrument on the minds of the beginners, and I find that they appreciate it. First measure familiar and large objects, and then follow with less familiar and smaller ones.

By this time students will be ready to determine the magnifying powers of both simple and compound instruments. See to it that they learn the principle and make free use of it. Every student who has an instrument of his own should be permitted to bring it to the class, and determine the value of the various combinations, as well as taught how to record them.

The use of the camera lucida and drawing naturally follows at this point and should be given attention. A review of all that has been studied is appropriate and will determine whether the students are ready for the next step.

The mounting of objects will have excited the curiosity of students by this time, and they will be ready to give it close attention. Commence with the very simplest forms of dry mounts, and then step to the use of liquid media, and finally the use of "balsam" and other resins.

The mounting of crystals and other objects which require special manipulation can follow the simple work.

Section cutting and the preparation of specimens of various kinds will next interest the student. Here special attention and practice should be confined to pharmacy, but reference can be made to work in animal histology and pathology.

It will be observed that the above outline of study is not in the order that a person will follow when working at home. The microscopist will cut sections, prepare and mount the specimens, and then measure and otherwise study them. It is from experience that I have concluded that a different order is better for instructions.

It is not my purpose to outline a course in the application of microscopy to pharmacy, such as the study of vegetable histology, the detection of adulterations, etc. In such work text-books and collateral instructions are serviceable. The subject is one worthy of a special paper.

The proper care of the microscope should be insisted upon in the class-room, so that the students will not neglect it at home.

Towards the close of the course is the proper time to impress the students with the importance of forming collections of such specimens as are of use in work or entertaining when exhibited. I always feel as if the microscopist who never makes permanent mounts is like a person who does not preserve books for reference after having read them. Both books and permanent mounts are of use to others.

Pharmacy students scatter to all parts of the country, and can do a good work in the interest of microscopy if they form local organizations where even two or more workers are found. Competent physicians are ever ready to join, so that the druggist and doctor can meet on a common ground and instruct each other in the application of microscopy to their respective vocations.

The low price of microscopes at the present time enables any druggist to own one, so that students should be urged to make the instrument one of the requisites for a well-kept store, and use it as often as possible. Local societies assist in this direction. While the microscope is a necessary instrument for the use of the educated pharmacist, it is also serviceable for amusement. The pestle and mortar should not leave the laboratory, but the microscope will grace the home and entertain a drawing-room of visitors. Teachers can point this out during the course of instructions, and occasionally use specimens suitable for such occasions as sociable gatherings.

The course of instructions must not be closed without reference to the literature of microscopy. Each teacher will have individual ideas as to books and periodicals, but all must agree that it is desirable to keep posted on current topics, and each owner of a microscope should take one or more periodicals.

The world's fair—the ladies.