

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS
DEPARTMENT.

Editor's Note: The following paper by Prof. Edward P. Claus presents a method of teaching microscopical pharmacognosy that will make a subject that, to some, is dry, uninteresting and impractical, become interesting, instructive and enjoyable. I am fully aware of the fact that botanists will not agree with me that microscopical pharmacognosy may be what I have implied, but personal experience tinges my views. I am also aware of the fact that I have no authority to criticize the teaching of subjects outside of my field, but if all students, including those that may have special interest for the subject, must take certain courses, then it is our duty to make them as interesting as possible. A dry subject may become intensely interesting in the hands of a good teacher and a live one may lose all interest in the hands of a poor teacher. The paper by Prof. Claus will be helpful to teachers of pharmacognosy.—C. B. JORDAN, *Editor*.

MICROSCOPICAL PHARMACOGNOSY.

BY EDWARD P. CLAUS.*

Dr. L. K. Darbaker has not given me his original paper on this subject, but since his ideas embody our teaching plan, I shall try to relay to you some of his thoughts.

In the Pittsburgh College of Pharmacy, School of Pharmacy, University of Pittsburgh, the student in the freshman year studies biology, in the second year microscopy and in the third year, histological pharmacognosy. He has a distinct advantage in these studies by performing practical work in the same laboratory for these subjects under the guidance of the same group of instructors. The work has been correlated in such a manner that one course is related directly to the next.

The members of our department feel that when the average student enters college, in no matter which field, he is more or less ill at ease, nervous and easily discouraged due to the extreme change in environment. In consideration of these factors, we believe that the best method of beginning instruction in biology is the laboratory study of plant specimens with which the student is familiar, particularly, members of the spermatophytes which he sees practically every day. This procedure is in direct contrast to the usual method of study from the taxonomical viewpoint, from the lowest to the highest forms. However, we feel that, given something he can identify and examine easily, the student's first few days are made more pleasant, and his attention and interest are stimulated. A field aster, a morning glory flower, bean seedlings and corn seedlings, for the first few laboratory hours, followed by more complex spermatophyte forms, then members of the pteridophytes, bryophytes and thallophytes, interspersed with simple experiments on growing plants constitute the first semester's work. Living material is used whenever possible. Microscopical work is not considered except if important structures or tissues are to be seen, and then the microscopical slides are under the direct supervision of the instructor in charge. During the freshman year, the student is directed in the proper method of collecting, drying and mounting of botanical speci-

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mens, particularly of plant drugs, is encouraged to start an herbarium, and is given opportunity to enlarge this collection throughout his school career. Last year a number of our students displayed such mounts of medicinal plants in drug store windows during pharmacy week. The second half of the biology course is devoted to zoölogy in the same anatomical manner, from the higher, more familiar forms to the lower forms, macroscopic work only being considered. Field work, museum trips and trips to the medicinal plant garden are essential parts of the biology course.

The second year microscopy work first considers the microscopical animals, completing the zoölogy course, and then microscopical plants, of the algæ and fungi groups. Hence, this particular part of the work might be termed microbiology, with the exception that bacteriology proper is not touched upon in laboratory until the student's senior year. After the student has completed the microscopical botany course, observing single-celled plants as *gleocapsa*, *pleurococcus* and the like, the next natural step is the simplest cell of the higher plants, the parenchyma cell. This relationship is stressed, comparisons being made in the manner of structure, functions, reproduction, etc. From this point on through, the sophomore year might be termed elementary histological pharmacognosy, since in each laboratory period, the student learns of new cells and tissues, and of official plant drugs in which these cells and tissues are found. Instruction is given in the preparing, sectioning, staining and mounting of plant drugs. A study of starches, crystals, cell contents and fibrovascular bundles is also considered.

The third year histological pharmacognosy course enables the student to study how the various combinations of cells and tissues constitute the various plant parts. He studies the official plant drugs in groups: *i. e.*, barks, woods, roots, rhizomes, leaves, flowers, seeds, fruits, etc. Then, since he has a thorough knowledge of each individual cell, he can readily identify the plant part and tissues present in, for instance, a section of *Apocynum cannabinum* or in a powder of the same drug. Also he can identify powdered drugs and upon examination of a powder, he can state whether it is adulterated or not by the mere presence of a number of cells foreign to the plant part in question. His microchemical tests would enable him in some cases to name the adulterant. Since such products as talcum powders, artificial foods, infant foods, spices and condiments are commonly sold in the retail pharmacy, microscopical examination and microchemical tests for these products form an important part of the student's training.

All of the laboratory work is supplemented with lectures, recitations, displays, lantern slides, motion pictures and demonstrations as well as field work. By means of this orderly arrangement and obvious relationship of courses, we are convinced that the average student is encouraged to do better work, and is able to grasp the subject matter more easily and in a more coördinated form.

SHALL THE RELATIONSHIP OF BOTANY TO PHARMACOGNOSY BE MAINTAINED?

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Editor's Note: The old question as to whether basic subjects should be taught by men trained in pharmacy is presented by Dr. Ballard in so far as it applies to botany. His arguments

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