

- (7) Taylor, T. W. J., and Baker, W., "Sidgewick's Organic Chemistry of Nitrogen" (1937).
- (8) Coghill, R. D., and Sturtevant, J. M., "An Introduction to the Preparation and Identification of Organic Compounds" (1936).
- (9) Desha, L. J., "Organic Chemistry" (1936).
- (10) Herschfelder, A. D., and Beiter, R. N., *Phys. Rev.*, 12, 190 (1932).
- (11) *Merk's Report*, 11, 313 (1902).
- (12) YEAR BOOK A. PH. A., 9, 138 (1920).
- (13) Thayer, F. K., U. S. Patent 1,596,259 (Aug. 17, 1926); *C. A.*, 20, 3781 (1926).
- (14) Rider, T. H., *J. Pharmacol.*, 39, 329 (1930).

FIELD TRIPS AUGMENT INTEREST IN PHARMACOGNOSY.*

BY VICTOR LEWITUS.¹

(ABSTRACT.)

In order to increase interest in the course in Pharmacognosy, the writer thought it opportune to exhibit as many plants in their natural habitats as possible. He inaugurated a series of outdoor field trips, two during the fall of the year and two during the spring months.

Surprisingly enough, it was found worthwhile to use this method regularly as a part of the course since students introduced to this procedure were much more appreciative of the work in Pharmacognosy after a few introductory ramblings among the growing plants used in official medicine.

Remembering that a field trip is not a picnic (as the youthful student is apt to consider it), but a regular lesson for a serious, though enjoyable, portion of the day's study, careful plans must be laid by the instructor beforehand. Chronologically scheduled, the outdoor trips may be arranged so that two will come in the fall, when rhizomes, roots, barks and woods are usually treated of in the standardized courses; and two will occur in the spring, when flowers, leaves, etc., are taken up. The fall trip should come not earlier than the third or fourth lesson in the subject, since it will take that long to cover the introductory phases of the subject. Once acquainted with the purpose and procedure, the student is then ready to profit by his or her experiences.

The following rules should be a guide to those wishing to augment studies in Pharmacognosy by field trips:

I. The purpose of the trip should be clearly outlined a week or so beforehand.

II. Depending on the proximity of the area to be visited, the time devoted to such a trip should be arranged on an "exchange" basis with some other department (*e. g.*, exchange of hours).

III. Students should equip themselves with a special notebook; taking notes and making sketches as they go along.

IV. Notes should bring out the following details regarding each living drug: (a) Habitat (kind of soil, moisture, elevation); (b) Name of plant and synonyms;

* Presented before the Scientific Section, A. P. H. A., Minneapolis meeting, 1938.

¹ Formerly Instructor in Materia Medica, Columbia University College of Pharmacy, New York City.

(c) Botanical family; (d) Part of plant official in medicine; (e) Brief historical sketch; (f) Reduced drawing showing representative portion of the whole living plant (in case it may be picked—see State Laws—draw the root or rhizome system also); (g) Drawing of the dried drug used in medicine (on return to the college).

V. Special credit may be assigned for students having the most carefully worked out field-trip notebook. All such books are returnable at the end of the course.

VI. Special reports on the plants encountered in the field, may be required by the instructor to improve habits of outside reading along the lines of the subject.

VII. The spot to be visited may be wooded land, field or even a botanical garden. It is best to visit virgin soil, a new spot to be selected during each of the trips. (The suggestive list of living drugs is too lengthy to include here.)

The results of such a series of field trips that may be expected are:

1. It associates for the student the name of the plant and its origin.
2. The student will better remember the part of the plant used in medicine.
3. Physical characteristics receive added emphasis.
4. Comparison before and after collection of the drug is afforded.
5. Presence of certain types of foreign matter are better understood.
6. The student is more apt to look into the historical background of a drug, since he is stimulated in this way.
7. This procedure builds up a better *cultural and scientific* background.
8. It enhances the general interest in the subject of Pharmacognosy.

FUNGAL INFESTATION OF POWDERED DRUGS.*

BY FANCHON HART.¹

The eight drug powders susceptible to mold infestation selected for these experiments were: Althaea, Capsicum, Cascara, Ginger, Licorice, Rhubarb, Mustard and Sarsaparilla. All were sterilized, moistened with sterile water and inoculated with *Aspergillus niger*, *Penicillium glaucum* and *Rhizopus nigricans*. I noted the rate of growth and the abundance of each organism on the drugs used as culture media. *Aspergillus* and *Rhizopus* grew most rapidly and abundantly on Althaea; *Penicillium* most abundantly on Mustard and most rapidly on Licorice.

Fruiting stages were developed on most substances used. The portions of the powders exhibiting the spores showed no physical change but the vegetative forms of the fungus manifested definite changes in the starches of the various drugs. The iodine-starch test showed that changes occurred through vegetative growth. The starch in contact with the hyphae was rose-pink to bluish rose in comparison with the characteristic blue color.

On Althaea *Rhizopus* appeared as a buff-colored leathery mat with fine hairy surface dotted with the black sporangia. The leathery surface was stretched.

* Presented before the Scientific Section, A. PH. A., Minneapolis meeting, 1938.

¹ Professor of Bacteriology, Columbia University, College of Pharmacy, New York City.