

Library of leaves

By Betty Cook Rottman

Replacing herbarium folders in the files of the botany department is Lowell Logan, who is working on his Ph.D. at the University while on leave from Arkansas Polytechnic.



The herbarium of the University's botany department has grown to a collection of about 100,000 plant specimens, vital research tools which form a historic record, much like the books in a library.

Currently the herbarium is being used to revitalize plant identification in the botany program. Dr. David B. Dunn, assistant professor of botany, says the role of botany in the college curriculum is changing. Many students are now taking botany as a general science course. Larger classes and science emphasis had gradually brought about less plant recognition, but the University is now attempting to renew this aspect.

The specimens are kept in tall cabinets lining the walls of Room 208, Lefevre Hall. A group display of poisonous plants was mounted last fall for use in a course for veterinarians. Class averages rose by ten points through use of the specimens.

Specimens of woody plants and spring flora were first hung last spring to supplement the general botany laboratory. They are mounted on cardboard and covered with clear plastic with a yellow border. Poisonous plants are identified by a blue border.

All are hung on the laboratory wall with labels bearing their Latin names. Common names are also a portion of each label, folded down so the student may test himself.

This display may be seen by high school classes, Scouts, 4-H or other groups at any time when the laboratory is not in session.

Students are required to learn the Latin and common names of a certain number of specimens. Identification of several specimens is now required in addition to regular laboratory tests.

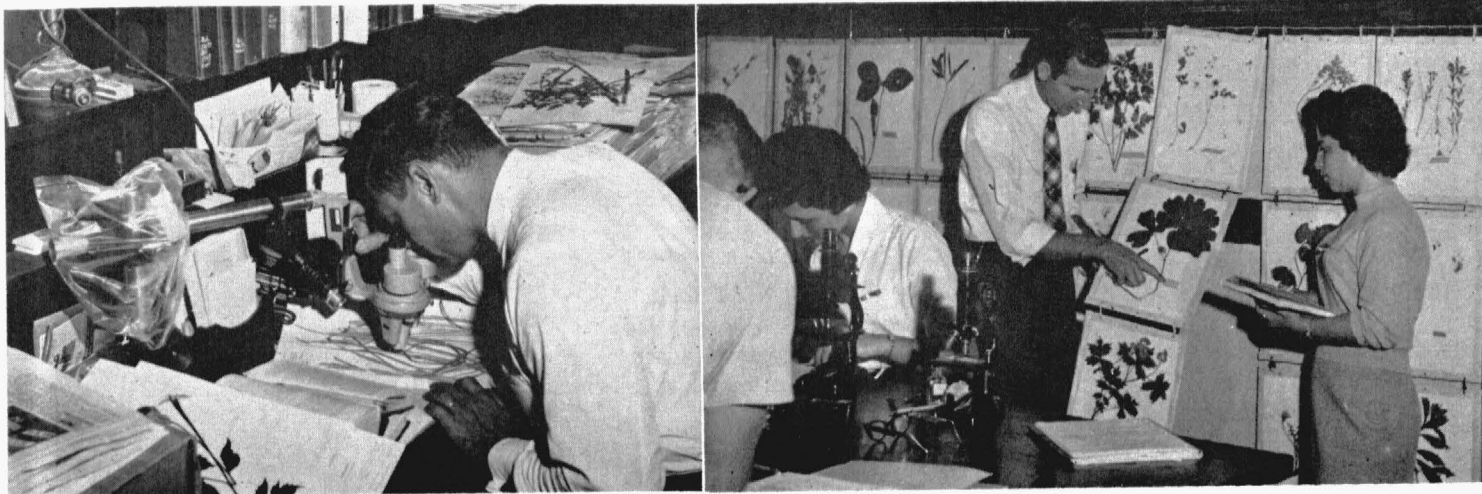
Herbaria frequently exchange material. For this reason, several specimens of a plant are prepared at one time. The University herbarium now has loans from Santa Ana Botanic Garden, the University of California Los Angeles Campus, and Field Museum, Chicago. Some specimens on exchange are more than 200 years old.

The botany department here has been assembling its herbarium since the opening of the University. Currently it is making a collection of all cultivated plants on the campus.

Last summer Dr. Dunn preserved specimens of pollen from the anthers of fresh flowers, a project made possible through a faculty summer research grant. Flowers from which the pollen is taken are also preserved as authentication for identifying the pollen.

This collection will serve as background material from which studies can be made of what plants were

Giant bluestem grass specimen, similar to that found on Tucker Prairie, can be studied from its herbarium sheet with the long-armed microscope provided by the Alumni Achievement Fund. Dr. David Dunn is using the microscope, which has aided in the identification of more than 400 plants sent in by Missouri citizens. At right, Joseph M. Wood, instructor in botany, explains to student how she may test her knowledge of plant names.



Photos by the author

here in past ages. Comparison will show interrelationships of any two groups of plants.

"Structure of pollen grains is a genetically fixed trait," Dr. Dunn explains. To illustrate, he displays a specimen of present swamp cypress on his desk, which has basically the same structure as a cypress of 10,000 years ago.

Two types of slides are being made, one showing fresh pollen grains, and the other showing detailed structure of the wall of the grain.

Dr. Dunn, who began work on his project about a year ago, says this is not a new idea, but few places have a sizable collection of pollen slides.

Good microscopes are necessary for good research. Two have been added recently to the botany laboratory. The Alumni Achievement Fund has given the department its first long-arm research microscope, making it possible to study large specimens from the herbarium sheets. This magnifies 90 times.

A compound microscope equipped for photomicrography was purchased with grants from the special equipment fund of President Elmer Ellis, and the research fund administered by Dr. Henry Bent, dean of the Graduate School. This microscope, which can enlarge specimens 1,900 times, has a built-in light source. It is used to study and photograph pollen grain and chromosome structure.

Two indexes have been added this year. The Gray Herbarium card index, of which there were originally only 20 sets made, lists all described plants of both North and South America since 1870.

The Index Nominum Genericorum contains all known plant genera of the world. The generic name is the first of two names in a scientific name. An example is *Viola Missouriensis*. "Viola" is the genus; "Missouriensis" is the species.

This index will be kept up to date through a subscription series. An important aid to researchers, it also prevents duplication in naming new plants.

Both sets of indexes were purchased through the library research fund.

Recent additions to the grass collection of the University herbarium are 14,000 specimens donated by Dr. Julian Steyermark, and 1,000 specimens given by Ernest J. Palmer.

Dr. Steyermark, who was formerly with the Field Museum, Chicago, made his gift last summer while serving as visiting associate professor of botany here.

He wrote "Spring Flora of Missouri," and is now revising "Flowering Plants of Missouri." The latter book was written jointly by Palmer and Steyermark. Palmer is a long-time Missouri resident and early collector, for whom several plants have been named.