

Spring scented the air when the company of soldiers and a civilian rode out from Fort Smith, Ark. on May 16, 1819. Their route was southwesterly through Poteau, the Winding Stair Mountains, and the Kiamichis toward the Red River.

Commanding the soldiers was Maj. William Bradford, whose assignment was to warn the settlers in the area that they were to be dispossessed. Anticipating the treaty of 1820, the government, he told them, would establish Indian Territory.

The civilian was Thomas Nuttall, and his was a different mission. It was scientific, for he was a naturalist—the first to collect and study the plants of Oklahoma. Historically, Nuttall's journey is probably more important. He collected extensively along the way. In Choctaw County, he lagged behind the others and became separated from Maj. Bradford's party.

Remaining in the area for three weeks more, Nuttall returned to Fort Smith on June 21 in the company of three traders. But his mission had been most successful. He found many plants new to himself and indeed new to science.

Other pioneer botanists followed Nuttall into Oklahoma, collecting or describing the vegetation. Usually they traveled with soldiers over rough and hazardous country.

The work they started continues today; however, the modern botanist does much of his study in a herbarium, a sort of loose-leaf reference library of plant specimens. When he goes into the field to collect, he needs no soldiers to protect him, and he goes by automo-

bile instead of horse. Yet his enthusiasm is not unlike Nuttall's, for there are still species to be found which are new to Oklahoma and occasionally one new to science.

"Oklahoma's flora is most interesting and diverse because of the variance in terrain, temperature, and rainfall," says Dr. George J. Goodman, curator of the herbarium at the University of Oklahoma. There are 2,500 species of flowering plants which grow wild in Oklahoma, and there are differences within individual species. It is hard to find one species that crosses the state from east to west, Dr. Goodman notes. "I can understand Nuttall's enthusiasm for what he found," says Dr. Goodman. "I have spent the happiest years of my life studying the flora of Oklahoma."

The first systematic collection of the flora of Oklahoma was begun in 1899 by Dr. A. H. Van Vleet, professor of botany at OU, who established a herbarium. Twice the herbarium burned, and each time new collections were begun. G. W. Stevens, a professor at Southeastern State at Durant, was the first to collect widely in Oklahoma. He compiled a descriptive list of the flora of Oklahoma for his doctor's dissertation from Harvard in 1916.

The present herbarium, recently relocated in the new botany and microbiology building, was started in 1920 by the late R. E. Jeffs, but some of its specimens date back much farther. There are plants collected in the 1820s in Europe, about the time Nuttall was collecting in eastern Oklahoma. Unfortunately, none of Nuttall's specimens are owned by OU. They are at

the National Academy of Sciences in Philadelphia and in Harvard's Gray Herbarium. Duplicates are not available, although Goodman hopes someday to get pictures of Nuttall's collection of Oklahoma flora.

Of the 150,000 specimens on file in OU's herbarium, about one-half are of Oklahoma plants. The remainder are largely North American, although there is a growing number of European, Asian, and South American specimens. "The oldest Oklahoma plants which we have," says Dr. Goodman, "were collected near Sapulpa, Indian Territory, in 1894." The collector was B. F. Bush, an amateur botanist from Independence, Mo. The specimens came to OU from Harvard. Exchanges with other herbaria have greatly enriched OU's collection, Dr. Goodman explains. Duplicates of about 2,000 specimens which were destroyed in the last fire have been received from other collections.

Unlike the pioneer botanist who collected sparingly because of transportation problems, the modern collector gets dozens of specimens, keeps what he wants, and sends the rest out as exchange. For every 100 specimens he keeps, he sends out 900 and gets that many in exchange. So he adds 1,000 new specimens to his collection.

Among universities with which OU exchanges heavily are Harvard, California at Berkeley, Colorado, Texas, and Southern Methodist. There are also a few foreign exchanges, particularly with the Instituto Lillo in Tucuman, Argentina. Many specimens have come to the herbarium from private

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WE'RE GETTING THE GOODS ON FLORA

Dr. George J. Goodman (left) is curator of the University's herbarium, which despite two fiery setbacks, now houses more than 150,000 plant specimens, thus providing students a promising collection of history at the grass roots level.

By JUNETTA DAVIS



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donors. In fact, the OU collection is named for the late Robert E. Bebb, a Muskogee businessman who bequeathed his private herbarium to the University in 1942.

The herbarium specimen is dried and mounted on heavy white paper with a label showing the scientific name, where it was collected, when and by whom, and the type of terrain in which it grew. Each specimen is, in fact, a little bit of history, not only of the plant but sometimes of the collector and his times. Incidentally, many plants are named for the men who discovered them.

Dr. Goodman shows an interesting trilogy of specimens. All are the same plant, the *Centaurium Beyrichii*, a flowering limestone outcrop. One was collected in 1849 near Comanche spring, New Braunfels, Tex. The collector was the immigrant German, Ferdinand Jakob Lindheimer, whose hobbies were botany and establishing German colonies in central Texas. The second specimen of the trilogy was collected in the same general area exactly 100 years later. It was collected by an OU graduate—Ralph W. Kelting—five miles west of Hunt, near the north fork of the Guadalupe River. Goodman collected the third specimen in July, 1961, on eroded slopes of Baum limestone six miles west of Ravia in Johnston County,

Okla. which is about as far north as the plant grows.

Except for the labels, the observer might assume that the specimens were about the same age. Although it is 116 years old, the Lindheimer specimen is remarkably well preserved.

Most plants have a restricted range where they grow. For instance, there's a small flowering shrub found near OU's Biological Station at Lake Texoma. It grows in a small patch there, in McCurtain County, and nowhere else in the world, according to Dr. Goodman.

The vast majority of the plants

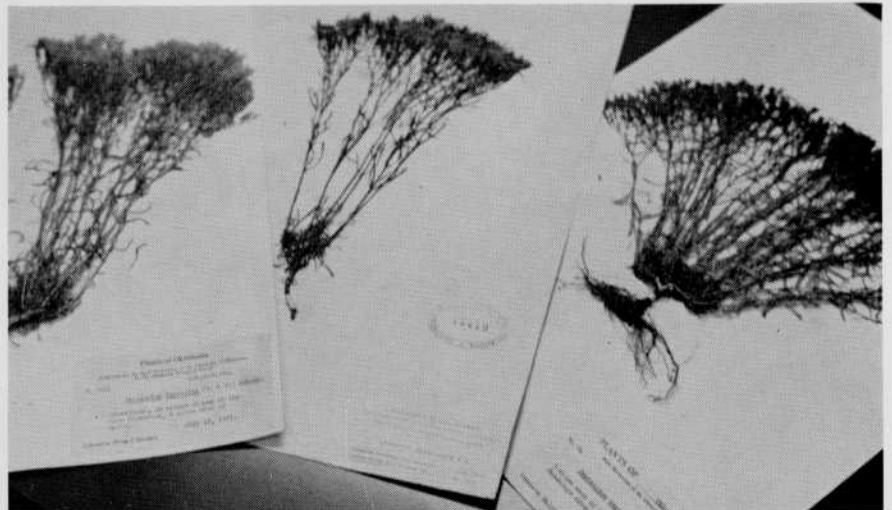
which grow wild in Oklahoma are not native to the state. They were introduced here in one way or another—seeds brought by settlers or pollen which came on cattle shipped from Europe. Take the mimosa. It is Old World, yet it has become a part of Oklahoma flora and was probably brought into the country by settlers. The elm is native to Oklahoma, however, and has grown here for centuries. But it does not extend farther west.

There are many species of grasses in the state. The herbarium has some 12,000 sheets of grass specimens alone, all of which grow in Oklahoma.

Sometimes, Dr. Goodman says, plants disappear for a while, say during a drought, and then return. People forget them and think they are new. They become curious and send in specimens for identification. This, of course, is one of the functions of a herbarium—to properly identify and classify plant life. Like a library, it is a storehouse of information, used by students, researchers, drug and chemical companies as well as private citizens who indicate they are curious about plants.

The flora of Oklahoma is part of the state personality. It changes from one section to another and with the climate and season, but it is something to behold and to understand. Of the Red River plains in southern Choctaw County, Nuttall wrote that spring of 1819:

“Nothing could exceed the beauty of these plains, enamelled with such an uncommon variety of flowers of vivid tints, possessing all the brilliancy of tropical production. . .”



The above trilogy of specimens of the same plant were collected in 1849, 1949, and 1961.