THAR'S (GEOLOGISTS') GOLD IN THEM

And the rush has been on for over 60 years as swarms of geology students have descended on the Arbuckles to plun

SOME 270 MILLION years ago—give or take a few million—majestic peaks, tens of thousands of feet above sea level, towered over what is now south central Oklahoma. Eons of erosion have destroyed these great mountains, but their core remains and is visible today. The roots of the old range are called the Arbuckle Mountains, and as every student who has ever taken Geology I at the University of Oklahoma knows, the Arbuckles are south of Norman on U.S. 77 between Davis to the north and Ardmore to the south.

Some of the students might have thought the School of Geology built the Arbuckles especially for field trips. If the professors had designed their own natural laboratory, it's doubtful if they could have improved on their present model.

"The Arbuckles are not only close but they offer an unparalleled variety of geologic phenomena," explains Dr. Edward Stoever, assistant professor of geology and the man who oversees the large Geology I program at OU.

Geology I is big business. It's not easy to find a graduate of the College of Arts and Sciences who hasn't taken the four-hour course and journeyed to the Arbuckles by bus for the traditional one-day field trip. The course satisfies a college requirement for a laboratory science course.

It's fitting that most choose geology, because OU's School of Geology is the best in the nation. More than half the geologists in the oil industry in the United States hold degrees from OU. Too, Oklahoma's heritage to a great extent is tied in with geology. Oil and the Sooner State have a definite relationship, and it's understandable that the state school should be a leader in geology and that its students are more geology-oriented or at least geology-conscious than the rest of the nation.

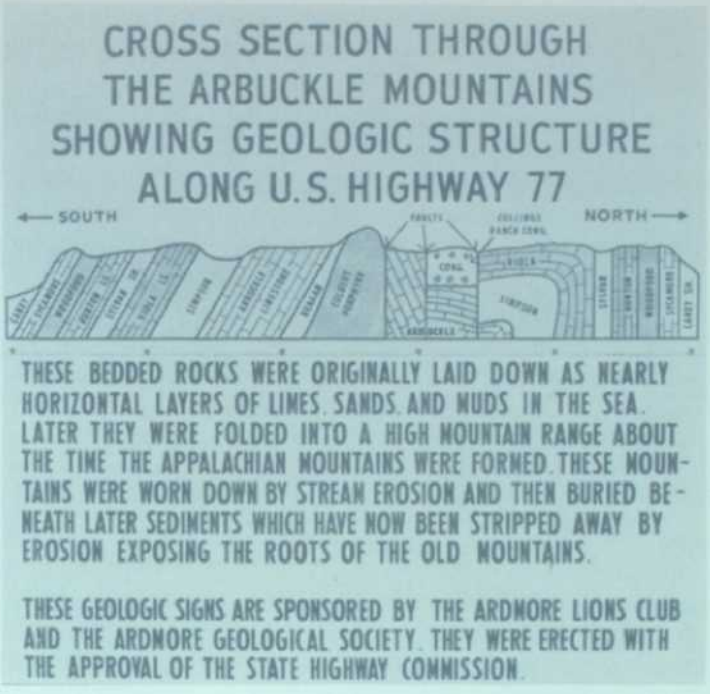
Last year 842 students, mostly freshmen and sophomores, were enrolled in Geology I during the fall semester. Another 700 took the subject in the spring. "The total number of students is increasing by 150 to 200 each year," says Stoever, with a not unconcerned pitch to his voice. "We've been forced to enlarge the lecture sections to 130-140 students, but we've kept the lab sections, taught by graduate assistants, small—about 25 in each."

Practically every member of the geology faculty teaches a Geology I section. Alumni who dragged themselves through the Arbuckles years ago may be surprised to find that many of the teachers who taught them are still introducing students to hogbacks and anticlines—and are still wearing them out on field trips. Veterans like Dr. Elmer L. Lucas, Dr. Reginald W. Harris, Dr. Frank A.

From the Seven Sisters lookout in the Arbuckles, field trip leader Ray Kerns points out evidences of the geologic history of the area.

THAR HILLS

eir rich lode of anticlines, faults and falls



Signs like this one showing the geological section have enhanced the interest in the Arbuckle Mountains for both amateur and pro.

Melton and Dr. Clifford A. Merritt, all full professors, still keep their rock-hunting hands in by handling a Geology I section.

First to travel to the Arbuckles was a group of 60 students, who in 1902 boarded the Santa Fe in Norman and headed south. The students detrained at Dougherty, today a bustling metropolis of 294 persons southeast of Price's Falls between Sulphur and Big Canyon. The group camped for five days at West Branch and under the direction of their teacher, Dr. Charles N. Gould, for whom the geology building is named, hiked through the area observing, picking and hammering in the geologist's tradition. The students initially dubbed their group the Rock Club which later became the Pick and Hammer club.

Since 1902, hundreds of OU geology students have annually crawled, crept and climbed over the rocks and hills near Davis and in the process have learned something. Says Ray Kerns, a graduate instructor finishing his PhD, who leads a field trip each semester: "We don't pay much attention to the geologic section when we go out into the field. That is, the order of rocks according to geological record. We're mainly interested in pointing out features that can be observed in the field and to use some of the geological concepts to develop a story about a region from the evidence we can gather. We're emphasizing concepts like stream erosion and the cycles of erosion, the mountain building process, differential weathering and the like, and we're able to show the student how a geologist uses these concepts to reach conclusions about an area."

Geology field trips, as many alumni can testify, get underway rather early. Buses, three of them in these high enrollment times, depart from the geology building at 7:30 a.m. for each trip, of which there are about a half dozen each semester. Students are attired in hiking clothes and carry notebooks and pencils, naturally, and a lunch

Continued on the next page

Students examine an outcrop in the Baptist Assembly Grounds, the convenient site of a significant variety of geological phenomena.

sack. There is always one or two who smuggle a few cans of beer, which invariably get hot and unappealing by the time an opportunity to drink them arises.

On the way the teacher on each bus points out certain features. "There are erosional and depositional differences between the divide on the South Canadian drainage system and the Washita River drainage system we think is significant," says Kerns. "And we show them mature and late mature stream features in the Washita flood plain like meanders and oxbow lakes. There is one of the latter which is very pronounced that we see going into Pauls Valley."

There's a coffee stop at Davis before the buses turn off toward the Baptist Assembly Grounds just southeast of the city. At the Seven Sisters on the way to the grounds, the students de-bus to take in this view of the Arbuckles. "Here we call attention to the non-horizontality, the steeply dipping rocks of the Arbuckles, and the students are called upon to determine the nature of the fold they are on—whether it's an upfold or downfold, an anticline or a syncline. There are some excellent features of erosion visible from the Seven Sisters (hills) vantage point—soil creeks and pressure ridges."

The next stop is the assembly grounds. "This is a good place," says Kerns, "because in a relatively small walking distance (some would take issue here) one can see several features of geological interest, both surface and bed rock. We point out structural features due to the deformation of the rock during mountain building. An angular unconformity is exposed there which marks a period in the geologic record and is used to date the period of mountain building. There are fossils to be found, but it's not easy. The outcrops have been picked pretty clean by previous groups." And there *have* been a number of them.

"By the time we break for lunch, most of the students are ready to sit down. After lunch we continue. We usually go by Price's Falls which is an example of a travertine or fresh water limestone falls. The falls were made by deposition af calcium carbonate from the ground water rather than by erosion as was the falls along Falls Creek in the Assembly Grounds. Turner's Falls is another example of falls caused by deposition rather than erosion.

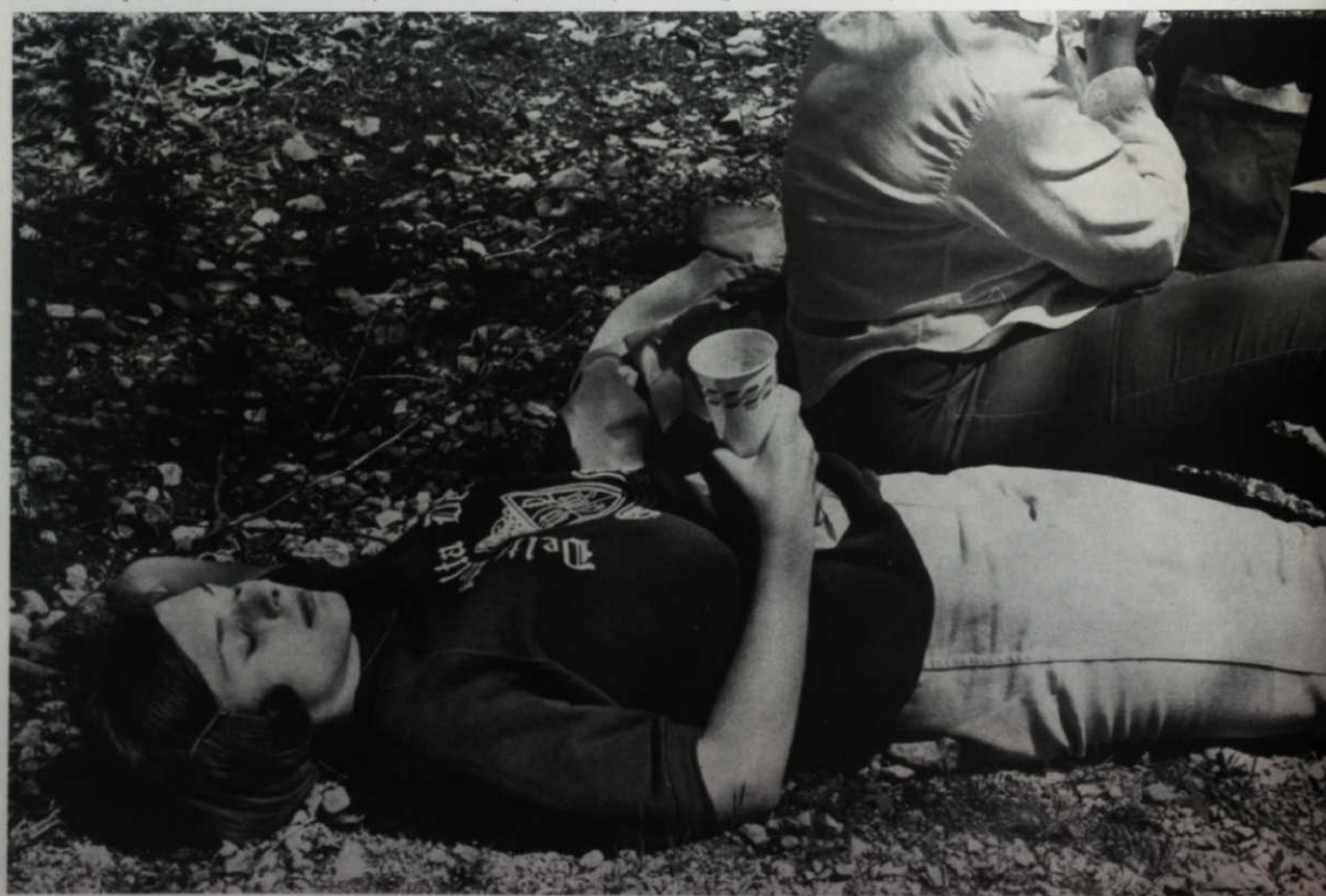
"Some professors take their groups to Sulphur and show them the artesian waters there. Others go over by the Dolese Brothers quarry and walk out an outcrop over a wide area. The students see these things on their maps in lab but here they have an opportunity to see them in three dimensions.

"We usually get back to Norman between 4 and 6 p.m., and the students are bushed enough to sleep on the way home.

"One of the values in the trip, I think, is that the students are provided with a natural laboratory and are exposed to the geologist's perspective in the field. This is very valuable to them."

For all alumni who missed Geology I while in Norman or for any who wish to take a nostalgic repeat of their Geology I field trip, write the School of Geology. But don't tell them who sent you. *END*

Has excess spoiled this rock hunter? Of course not. After a brief rest during the lunch break, it's onward and upward to more "finds."



Kerns leads his charges through the scenic Arbuckles, a welcome change from classrooms, which become almost stuffy in the spring.