THE CAVE THAT TRAPPED HISTORY

Natural Trap Cave has been collecting bones of unwary animals for at least 13,000 years. Expeditions led by a Mizzou anthropologist are digging up those bones and clues about the cycles of climatic change.

Text and Photos by Dave Holman
A herd of small horses stampeded through the tall grass across a plateau near the edge of a canyon, pursued by a large, long-legged cat. The cat closed on the slowest horse, forcing her along the canyon edge onto a peninsula of limestone. The cat sprang, fastened its claws and teeth in the horse's neck, and suddenly, horse and cat disappeared from the face of the earth.

Twelve thousand years later, a green panel truck and a dusty jeep bounced along a dirt road over the same plateau, now covered with sage and prickly pear. On the limestone peninsula where the horse and cat disappeared, the vehicles stopped by a 15-foot-wide hole in the rock.

Eighty feet below is the floor of Natural Trap Cave. The cave floor is covered with the accumulated dust of centuries, clearly stratified and containing thousands of bones of animals that failed to see the hole.

This summer was the second consecutive year that Bob Gilbert, research associate in Mizzou's anthropology department had led an organized expedition to the trap. He made an exploratory descent into the cave in 1973, found it rich in bone deposits, and thought it might prove to be an important site. After two summers of work there, he is sure it is.

"I think Natural Trap will be as important as La Brea tar pits," Gilbert said.

The trap already has yielded some impressive specimens. Workers have found mammoth, short-faced bear, dire wolf, camels, lion, wolverine, extinct species of horse, and a cheetah-like cat that is the first of its kind ever discovered. The other species are known to science but are fairly rare.

Although Gilbert is pleased with the specimens, he is more interested in gathering data that will chronicle the succession of climatic changes in the area from the end of the Pleistocene to the present.

"This whole idea of Pleistocene extinction should be of general interest, just to keep us humble if nothing else," Gilbert says. "Most of these critters we're digging up here became extinct about 11,000 years ago as a result of a major climatic change. Technocrats that we are, we tend to forget that we are mortal, too, and even small climatic changes can have a big effect on our lives."

Gilbert is an anthropologist, and it would seem unusual for him to be digging up bones of animals with no human relics in sight. Not so, says Gilbert, "As far as I'm concerned, this was and still is primarily an anthropological expedition."
B. Miles Gilbert, above right, chief scientist for the expedition, identifies the bones recovered from the cave. He did as much lab work as possible at the site, converting the kitchen tent into a laboratory between meals.

Soil samples, washed in a screen, leave tiny bones and tiny rocks. Benny Gilbert, above, picks out the bones for her husband to identify. The tiny bones tell more about past climatic conditions than the large ones.

The nearest bath tub was a spring-fed stock tank, right, a half mile from camp. The water was ice cold, and bathing was considered a sporting test of courage or an exercise in masochism rather than a personal or social amenity.
Knowledge of the climate of the area will be valuable to archaeologists who are trying to interpret artifacts at other sites. They know the Indians who lived in the area migrated from one ecological zone to another following the harvests of fruits, nuts, berries and the herds of game animals. When an archaeologist finds an artifact that can be dated, say 10,000 years ago, it might help him to identify its use if he had some idea what the makers of the artifact were doing in the area in the first place. Knowledge of the environment at the discovery site—not today, but 10,000 years ago—could be a good clue.

Gilbert was educated at the University of Kansas, and the expedition is being conducted in association with KU. Trap specimens will go to KU’s Museum of Natural History for storage and analysis. There is no museum of vertebrate paleontology at Mizzou and no professor who specializes in that field. The expedition coordinator, Bob Patterson, is an old friend of Gilbert and his wife and a zoologist at the Kansas museum.

All of the bones of micro-fauna—the tiny mice, voles, shrews, rats, etc.—have been brought to Mizzou for Gilbert to identify.

“We can get more useful data about the environment from these little critters than we can from all those great big bones,” Gilbert says. “These little fellows just couldn’t pack up and go to Florida when the weather got bad. They were much more rigidly adapted to their immediate environment, so when the climate changed, they became extinct.”

Surprisingly, neither Mizzou nor KU has much invested in the Natural Trap expedition. KU paid Patterson’s salary while he was there and provided the jeep. Other people from KU came to work in the site from time to time. Likewise, Mizzou paid Gilbert’s salary and the anthropology department’s American archaeology section let him use some equipment and two trucks. But Gilbert had to pay 12 cents a mile for them. Presently, Gilbert has a grant proposal before the National Science Foundation.

Most of the expedition participants paid $690 apiece for the privilege of going to a windy plateau in Wyoming and working like moles in a damp cave for three weeks. A non-profit corporation called Educational Expeditions International matches volunteers with scientists, collects the money from the participants, and finances such expeditions as the one at Natural Trap. The scientist gets his expedition financed and a pool of free labor. The amateurs get a chance to contribute to a worthwhile scientific endeavor, and they get an unusual vacation at the same time. If enough participants sign on, Gilbert plans an ESI-sponsored expedition to Guatemala early in 1976.

Columbian Lee Ann Fields was one of the participants in Wyoming. She is a sophomore in interior design at Mizzou and, like most of the people on the expedition, she had no previous experience in archaeology. Both Gilbert and Patterson were pleased with the work done by the amateurs.

“In fact, these kids did better work than a lot of so-called professional crews I’ve seen,” Gilbert said.

John Greer and Pat Treat, graduate students in archaeology at Mizzou, were there to supervise the digging, see that proper field methods were used, and maintain records at the site.

It will take several more years to excavate the cave completely. Gilbert believes they will eventually get down to true Ice Age animals such as musk ox. He doesn’t want to excavate the whole cave, though. He says the bones aren’t going to go away, and he would like to leave about half the cave untouched. Maybe in 10 years or so better technology will enable Natural Trap Cave to yield even more information than it can today.

“I’m grateful to the American archaeology section for letting me come out here and do research,” Gilbert said. “There are plenty of sites in Missouri, and they could tell me to stay home and work. But this is a unique site and I think we are doing good science out here. And we’re doing it on a shoestring. It’s also a hell of a nice place to spend the summer.”

Mizzou is getting the information.
KU gets the bones.

Natural Trap may be as important as the La Brea tar pits.