

ARCHAEOLOGY

# Czechs Rescue Antiquity

Scientists and students salvage relics and record evidence of the past

By Ruth Gruber

Special to The Christian Science Monitor

MOST, CZECHOSLOVAKIA

JAROMIR BENES stands atop a steep ridge of bulldozed dirt and gestures to a vast expanse of cratered wasteland populated by enormous machines which ceaselessly gouge out more earth from a devastated site stretching to the smog-clouded horizon.

It looks like a scene from a post-nuclear science fiction film, but in fact it's the Maxim Gorky opencast coal mine.

"This is where I work," Mr. Benes says with a laugh. He is an archaeologist, not a miner, but his job is to dig things out of the ground — things other than coal.

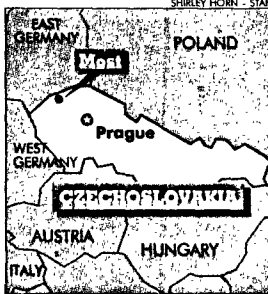
Attached to the Czech Archaeological Institute's branch in Most, Benes is a specialist in "rescue archaeology" — the attempt to salvage important relics and record the evidence of the past before it's wiped away by current and future developments.

There are rescue archaeology operations in countries all over the world, but the urgency of the situation is particularly clear near Most, a town in the heart of northwest Czechoslovakia's polluted mining and industrial zone near the East German border. This region has been settled for thousands of years and its archaeological evidence can shed much light on the development of civilization in Europe.

"Here we have an encyclopedia of the history of the past 6,000 years," Benes says. "There's everything from Neolithic to Iron Age to Roman, all the way to the Middle Ages. We have many unique sites."

But opencast lignite mines like the Maxim Gorky have transformed the countryside for many miles around into an eerie artificial "moonscape." About 150 local villages and innumerable sites of prehistoric and historic development have been swallowed up in the process, according to Benes.

One of the casualties was the 13th-century Gothic town of Most



SHIRLEY HORN - STAFF

itself: It was totally destroyed by an encroaching coal pit in the 1970s, and all its inhabitants were moved to a newly built prefabricated town nearby.

Rescue archaeologists sifted through the centuries-old buildings before the final demolition took place, and today the relics are stored in the one building salvaged from the doomed town: a Baroque church that was physically moved half a mile to escape destruction.

"It was really horrible," says Tomas Velimsky, an archaeologist who worked on the excavations of



JAROMIR BENES

ANCIENT POT: Fragment found near a pipeline trench may be 6,000 years old.

old Most.

Benes's job is to excavate as quickly as possible the areas directly in the path of the encroaching coal mine to preserve any important finds and to register and record whatever traces of human settlement he finds. The Maxim Gorky pit has an edge four kilometers (2.5 miles) long and, Benes says, it moves forward by 250 meters (820 feet) a year.

"I carry out my work in two micro regions, each 30 square kilometers (11.6 sq. mi.) of landscape," he says. "We carry out so-called total excavation — trying to look at everything that's under the soil . . . really, we're taking samples, because it's impossible to rescue excavate everything."

Among recent finds have been traces of more than 40 prehistoric buildings called long houses that date back to the Neolithic period about 4,000 BC, including evidence of prehistoric carpentry shops and other scientifically important details. The tomb of a nobleman from the Roman period, which contained many finely worked ornaments, was also found.

"There are about 10 mining areas near Most, and we're digging only in two of them," Benes says. "It's a compromise. We don't have the chance to excavate everywhere, so it's better to concentrate in those two areas which we know are good excavation areas." All told, he says, there have been some 1,200 rescue excavations in northwest Bohemia since the 1950s.

Most may be the most urgent region for rescue archaeology, but the process is also going on in other parts of Czechoslovakia — though not as thoroughly as archaeologists and historians would like. This is partly the result of a lack of funds and personnel, as well as apparent lack of interest in preserving this heritage.

"Ninety to 95 percent of the damaged archaeological sites are

not known," says Martin Kuna, of the Czech Archaeological Institute in Prague. "Most was an exception — the region was so destroyed by the mines that something had to be done. In other regions, the process is not so organized."

Mr. Kuna oversees rescue archaeology operations in the Prague area, at sites where highways are being built, pipelines are being laid, or other major construction is taking place.

NEAR the Prague suburb of Dablice, for example, four sites, possibly as old as the Early Stone Age, were found on the edge of a 100-meter (328-foot) stretch of trench where a water pipeline has been put in. Volunteers and students, paid a pittance, spend weekends painstakingly unearthing potsherds and other relics.

A quarter of a mile away, in the path of another pipeline, there are indications of dozens of tiny Roman iron forges, as well as traces of prehistoric settlements. Archaeologists will have only a month or so to see what's there, and put it on the map.

Just walking across the plowed fields near these two sites, Kuna picks up a small handful of pottery dating back to both Roman and Neolithic times.

"This area was intensely settled from prehistoric times," he says. "Rescue archaeology is basically recording things. Learning the type and extent of settlements, and also classifying them and clearly positioning them on the modern map."

"We mustn't have the illusion, that we can record everything," he says. But he adds that everything recorded provides another piece of the puzzle representing the history of humankind — and thus is important in understanding human development. "The landscape is changing so rapidly," he says, "it has to be done now."

## Specialists Team Up for an Israeli Dig

By Simson L. Garfinkel

Special to The Christian Science Monitor

REHOVOT, ISRAEL

IN a few weeks, Steven Weiner will be setting up his portable laboratory inside a cave on Mount Carmel, south of Haifa. He'll be helping a team of archaeologists piece together what life was like 60,000 years ago. Although some archaeologists might say a chemist like Dr. Weiner has no place on a dig, he is showing that his craft has many applications outside the lab.

"The Kebera cave excavation began in 1982," Ofer Bar-Yosef says, now a professor at Harvard University. He is one of the two organizers of this French-Israeli expedition. In 1983, the expedition uncovered a 60,000-year-old "almost complete burial of a Neanderthal man," he says.

Dr. Bar-Yosef expects other finds at Kebera to support the theory that "modern-looking hominoids" evolved in Africa more than 100,000 years ago and slowly spread to Europe and Asia.

The project includes four physical anthropologists, three archaeologists, two geologists, and one archaeozoologist. According to Bar-Yosef, having a wide range of professionals makes for better archaeology. "Questions can be asked and sometimes even resolved at the same time that the field work is taking place," he says.

Bar-Yosef met Weiner during his year-long appointment at the Weizmann Institute here. Weiner agreed to use his lab — a three-hour trip from the cave — to provide same-day analysis of mineral samples dug up at the cave. On most archaeological expeditions, samples are sent out to a laboratory for analysis: The results often don't come back for many months.

Inside the Kebera cave, the archaeologists found many animal bones in one location and none in others. Did the ancient inhabitants of the cave actually put bones only in one place, or were there bones throughout the cave that were later dissolved by running water?

To answer that question, archaeologists look for calcite, a yellowish mineral that dissolves in water. Any running water that would dissolve bones would also dissolve the calcite, so finding calcite without bones in a particular spot means that there were never bones in that place.

His first summer on the project, Weiner recalls, the archaeologists brought 50 samples back to his lab: None had any calcite. But that didn't mean that there wasn't any in the cave — it just meant that there wasn't any calcite in the samples.

"The second season, I decided the only way to solve the problem was to take the lab to the cave," Weiner says. Having the lab in the cave would let the archaeologists test many more samples; it would also let them use the results of the tests to decide where to dig.

The tool he took with him was his infrared spectrometer. By measuring how an unknown sample absorbs light at different frequencies, the instrument can identify the presence of different chemical compounds. Advances in computers and optics have enabled manufacturers to build spectrometers weighing less than 20 pounds.

Last summer, the question of calcite was resolved in three days, and the on-site lab started attacking other problems.

Bar-Yosef says this expedition is likely to be a model for others. "For many years, interdisciplinary research in archaeology was just lip service," Bar-Yosef says. But now, others are setting up digs that will use professionals performing on-site laboratory analysis.