

Construction crews unearth fossil 'treasure trove'

A Riverside County site yields camels, llamas, horses and saber-toothed cats, some well over 1 million years old.

Thomas H. Maugh II and Amina Khan, Los Angeles Times, 9-21-10

It happened more than a million years ago, but the fossilized evidence preserved the scene. A horse not much different from modern horses was enjoying a cool drink at a watering hole in what is now San Timoteo Canyon when a saber-toothed cat sneaked up and grabbed it by the haunch.

After finishing its meal, the cat left the skeleton to be buried in mud from flash floods. That cat, or one very like it, eventually also ended up dead and its skeleton joined the horse's in the accumulating sediment.

And then, 1.4 million years later, Southern California Edison crews constructing a new substation for the growing population of Riverside County unearthed the horse — tooth marks still distinct on its leg — the cat and a "treasure trove" of fossils.

Excavation at the site has so far revealed what may be California's oldest example of the saber-toothed cat *Smilodon gracilis*, a specimen more than a million years older than the *Smilodon fatalis* from the La Brea tar pits, which carry an array of fossils dating to as recently as 9,000 years ago.

Scientists so far have identified more than 1,450 specimens, including about 250 large vertebrate fossils and more than 1,220 fossils that are rabbit-size or smaller.

"And we're still counting," said paleontologist Robert Reynolds of LSA Associates of Riverside, the consulting paleontologists who are handling the dig for Southern California Edison.

Other specimens include llamas, horses and deer and more saber-toothed cats, some rare and others previously unknown. There is one of the earliest examples of a giant ground sloth and many of the fossils are in a remarkably well-preserved state, Reynolds said.

Smaller animals include meadow mice, gophers and kangaroo rats. Some of the remains are found in fossilized excreta, indicating that owls or hawks were hunting in nearby areas, then flying in and depositing the remains of their dinner on the site.

Researchers have also found remains of birch, pine, sycamore, oak, willows and cottonwoods, as well as cattails and horsetails.

"I've been working in this area for more than 40 years and have never seen concentrations of fossils like this," Reynolds said. So far, he said, the team has found more than 30 different species.

The fossils sharply increase the number of specimens available from what is known as the Irvingtonian North American Land Mammal Age, which stretches from about 1.9 million years ago to 250,000 years ago.

The find is also of great interest to geologists who have been attempting to deduce the history of the San Jacinto fault, a major fault that parallels the better-known San Andreas. Because the fossils were located in once-flat land that has been formed into a hill by a succession of earthquakes along the San Jacinto fault, the age of the

fossils found there provides a measure of when activity on that fault began, said geologist Jonathan C. Matti of the U.S. Geological Survey.

Comparison of the fossils with those from other sites revealed their age. That allowed scientists to deduce that the earthquakes caused by the San Jacinto fault that raised the land into hills had to be more recent than 1.4 million years ago.

"Anytime you get indicators ... of how old rocks are, a geologist is filled with joy," Matti said. The new find suggests that the average slip rate along the fault is substantially greater than geologists had previously believed. That, in turn, suggests a potential for larger earthquakes linked to it.

"I'm really glad" that state law requires companies to perform such studies at construction sites, Matti added.

Southern California Edison has a team of 70 biologists, paleontologists and other scientists who monitor construction sites specifically for artifacts. The team suspected that fossils might be present because paleontologist L. Barry Albright III, formerly a graduate student at UC Riverside and now on the faculty of the University of North Florida, had discovered fossils of the same age in similar rock formation elsewhere in the San Timoteo badlands. He found only a few species, however.

Doug Morton, a UC Riverside geologist who has mapped the area, said the find surprised him. "If somebody had asked me ahead of time what they would encounter, I would have said 'damn little,' " he said.

Reynolds said few people know about the find and the team will probably not begin publishing its results until next April.

"This sounds like a very nice, diverse assemblage that has the potential to provide some very interesting information," said Dr. John Harris, chief curator of the Page Museum at the La Brea tar pits, who has not seen the fossils. "They will be an important addition" to existing collections, he added.

On Monday afternoon, researchers at LSA were gathered around a long table cleaning up some of the finds. Paleontologist Carl Bennett, a tattooed, mustachioed paleontologist, was hunched over a sloth skull as long as his forearm, using a whining needle-like tool to clear away a layer of dirt. The skull is "the best ground sloth west of Texas of this age," Reynolds said.

Nearby, Reynolds was washing down sandstone particles removed from larger bones to look for smaller rodents' teeth, insects and other tiny artifacts that can provide valuable insight into climate at the site. He pointed to pinkish, fingertip-size fossils of sloth skin armor among the detritus.

Michael Stokes, a preparator, gestured at the stone-encased remains of a horse that he said "looked like somebody had walked right through it." Many people believe skeletons like those of dinosaurs are laid out the way they died, he said, "but that's not the way we find them in real life."

Once the scientists have finished with them, the fossils will be transferred to the Western Science Center in Hemet for public display. That will probably happen late next year.

Excavation is complete at the site and the substation will open by the middle of next year. Paleontologists suspect there may be more fossils in undisturbed areas adjacent to the site, but so far, no one is looking.