THEM DRY BONES

IN 1972, A MAN NAMED JOE B. FRIDAY UNEARTHED A CACHE OF CURIOUS LOOKING BONES IN A GRAVEL PIT JUST OUTSIDE LOCKESBURG. A LITTLE MORE THAN 40 YEARS LATER, THEY'RE STILL THE ONLY DINOSAUR BONES EVER FOUND IN ARKANSAS—AND STILL CONTINUE TO POSE MORE QUESTIONS THAN THEY ANSWER

BY PAUL MCDONNOLD | PHOTOGRAPHY BY SARA BLANCETT

South of Wright Avenue, Little Rock's Thayer Street takes on a primitive appearance. Tall trees block out the surrounding city; the loudest sounds are bird calls. Old warehouses stand like relics, rust spreading along their seams. Occupying one of them is the Arkansas Geological Survey's learning center, where visitors can tour educational displays on the natural history of The Natural State.

It's easy to imagine schoolchildren rolling into the parking lot by the busload, filing through the front doors into the exhibit-filled space. The tour takes the better part of an hour, (and is by appointment only). Visitors learn that, contrary to what we see around us, the ground we live atop has a richness and depth to rival any ocean. On display are rocks from pea-gravel to boulder size. Photos, paintings and diagrams adorn the walls. A small, dark room holds the most popular
exhibit: a glass case filled with fluorescent rocks—geodes, calcite and fluorite—glowing in neon reds, greens and oranges.

In the fossil section, there is a full-size replica of the *Arkansaurus fridayi*—the only dinosaur whose remains have been found in Arkansas. Vance Pleasant, a past cartographer at AGS, crafted the dinosaur from Styrofoam. It stands over several eggs nestled in dirt, flowers, ferns and grass—a fearsome predator with legs the size of small trees and skin like a salamander. The head resembles an ostrich and gazes at visitors from atop a long, curving neck. A tail the size of a python curls behind the creature.

Children, of course, find it fascinating and have been known to pepper the staff with questions.

Is that grass real?

No.

What about those eggs?

No.

The children's faith in the exhibit is an easy one. But our knowledge of the real Arkansaurus—what it was, how it looked—is much more uncertain than the display allows. To get some picture of it, we have to backtrack across vast expanses of time and change to conjure a creature and a world from deep in the mist of prehistory.

If the fossil record can be believed, what we now call Arkansas was once a very different place. A shallow sea stretched up from the Gulf of Mexico across the middle of the United States. Arkansas was coastal real estate—the southern California of its day. Reptiles of a thousand kinds, some larger than buildings, bounded through air, land and water.

Over time, the sea retreated. The land cooled and grew forests. The dinosaurs died off and disintegrated into the earth. But beneath the present-day town of Lockesburg, a part of one of them—a foot, to be precise—petrified in a layer of sedimentary rock geologists call the Trinity Group, surviving like a vague memory, waiting to be uncovered.

Lockesburg is a small town in southwest Arkansas at the crossing of U.S. Highway 59 and Arkansas Highway 24 in Sevier County. Blink, and you might miss it. The downtown district is a collection of historic storefronts in various states of repair, juxtaposed against a much newer E-Z Mart, where motorists stop to fuel both vehicle and body. A silver water tower stands over the scene like a long-legged spider. Lockesburg looks like a hundred other small towns in Arkansas, except you might find amethyst, quartz and fossils for sale alongside fruits and vegetables at roadside stands. This is quarry country, where layers of ancient rocks and minerals lie below your feet.

I arrive here one June morning to visit Joe B. Friday, the man who found the Arkansaurus bones. Within sight of downtown, I pull up to Friday's home, a comfortable single-story built in 1968. A long driveway leads around back, where a lawn slopes down and away to a pasture and pond. A dog stands to greet me as Friday appears at the back door. We go into the family room, where he has a cast of the bones that have been arranged into a complete foot. With three spectrally long toes, it looks strikingly like an emu's foot, but far larger—over 24 inches from base to claw.

Friday asks if I want to see where he found the bones, so we take his truck to Arkansas 24 and go west. Just out of town, near the Little Cossatot River, a gravel-and-sand quarry sits empty on the south side of the highway. On the north side is Friday's land. In places along the culvert, grass and topsoil have eroded away, leaving rocks and gravel and reddish clay visible—the Trinity Group.

Friday turns onto a crude drive. He grabs a shovel, and we walk around some dense growth into a low, wet grassy area surrounded by trees. Branches and leaves overhead form a sieve against the sun, infusing the spot with twilight. This was once a gravel pit. But by August 1972, the gravel had been removed and used to build up Arkansas 24. That was when Friday was drawn to the site by buzzards.

"When you have cattle and you see buzzards on the ground," he says, "you go look."

Friday plunges his shovel into dirt brought up by a nearby fallen tree. "That's what it looked like," he tells me, meaning the dirt—a grayish clay flecked with color. Sticking out of just such soil back in 1972 were the strange-looking bones, hard as rocks.

At the time, Friday owned a service station in town. For a number of months after finding the fossilized bones, he kept them there as curiosities. Customers proved very interested in the objects, but like Friday, could offer little on what kind of animal the bones might be from.

"No one had any idea that they were dinosaur bones," he says.

A friend of Friday's suggested letting his son at the University of Arkansas have a look at the bones. The son, Doy Zachry, took the bones to Fayetteville and showed them to geology professor James Quinn. No stranger to fossils, Quinn became excited. He identified them as the foot bones of a dinosaur, assembled a team and came to Lockesburg as soon as he could to explore the site. He found a couple of small additional pieces of the foot that

DID THE ARKANSAURUS WALK HERE?

Nashville, Arkansas, lies 20 miles east of Lockesburg. There is a gypsum quarry north of there where the lush countryside has been peeled away to reveal something like the surface of the moon. In the summer of 1983, a graduate student from Southern Methodist University in Dallas, Jeff Pittman, came to study the exposed rocks. He drove across a quarry floor studded with treacherous, oddly shaped pockmarks. With the help of a professor, Pittman eventually realized this 120-million-year-old limestone was the literal stomping ground of dinosaurs. The pockmarks were their footprints.

The Nashville dinosaur trackway was among the largest ever found. It inspired an annual Dinosaur Festival in town. Most of the prints were made by sauropods, long-necked herbivores up to 50 feet long.

A whole new field of tracks was uncovered in the same quarry in 2011. University of Arkansas professor Stephen Boss put together a team and came to study the site. The most striking of the new tracks were thought to belong to a predator. The tracks looked like giant bird prints, 2 feet long with three prominent toes. But despite a similar appearance, they were not the marks of the Arkansaurus. Boss believes the tracks were made by a cousin of the Tyrannosaurus rex. Nonetheless, the tracks at least offer scientists additional evidence of the dinosaur age in Arkansas.

Friday had missed. Quinn cleaned and arranged the bones, using clay to sculpt in a few missing pieces to make the foot complete. He then made a mold and produced cast replicas, giving one to Friday, who donated the bones to the university.

Quinn's analysis of the find appeared in the 1973 Geological Society of America meeting abstracts. Unfortunately, he was not able to definitively match the bones to a known species of dinosaur. He did note that the foot belonged to a "bi-pedal, bird-like carnivorous dinosaur." He informally christened it *Arkansaurus fridayi* in honor of the state and the finder.

Quinn hoped to one day place the fossil as a specific known species, to tie it neatly into the larger story paleontology was weaving. But tragedy intervened. In 1977, he died in a fall at a stone quarry in Nebraska while fossil hunting. Interest in the Lockesburg site, however, continued—for a while. Another team from the University of Arkansas and one from Texas Tech University eventually explored the site, finding nothing of significance. After that, Friday decided to take one last look himself.

"My brother and a cousin and I took a backhoe down there," he tells me. It was the first time in all the searches that mechanized digging was used.

"We didn't find anything."

The rest of the remains may have been scavenged or disintegrated long ago, or scooped up with the gravel and laid down as part of Arkansas 24. Today, 40 years on, those foot bones are all that survive of the Arkansaurus—for all we know, all that survives of any dinosaur in the state of Arkansas.

Uncertainty is the bread and butter of professional paleontologists, and there is no shortage of it. The detailed skeletons and dioramas on display in museums belie a large amount of conjecture. As time passes and new finds are made, the state of conjecture can shift—sometimes radically.

Remember the Brontosaurus? That gentle giant loping around munching on treetops? It turns out it never existed. In 1932, the Carnegie Museum in Pittsburgh compounded the error of an early fossil hunter by placing the wrong skull on the skeleton of a different dinosaur called an Apatosaurus. A Brontosaurus was born. The mistake wasn't corrected until 1979.

Does anyone think dinosaurs were sleek-skinned lizards? In the 1990s, paleontologists began to find evidence that many dinosaurs, if not most, were feathered. This could include the Arkansaurus. These were years when little new information about the creature appeared, as if interest in the bones had been lost in Quinn's fall. Then in 1998, Russell T. Johnson of Little Rock decided to write about the creature for his website (arkansasroadstories.com), where he chronicled tourist attractions around the state in words and photographs.

Johnson's Arkansaurus project did not go well. At the Arkansas Museum of Science and History in Little Rock, he was prevented from taking photographs of the dinosaur's foot cast. Then, in the interest of seeing the real bones instead of a cast, Johnson went to the University Museum in Fayetteville but was told the original bones were gone. He got no definitive answer on where they were, other than that Texas Tech might have purchased them. When officials at Texas Tech's museum assured Johnson they had bought no bones from Arkansas, he delved deeper. Johnson had a biology degree but no formal training in paleontology. Working from the casts and a detailed reference book known as *The Dinosauria*, he began to see what some others had noted before, that there were small but significant differences between the Arkansaurus bones and other known dinosaur fossils. Now, with the bones seemingly missing, that led him to ponder on his site whether the Arkansaurus might be some kind of fake.

This touched a nerve in the dinosaur community, and Johnson eventually posted three pages of follow-up correspondence with various people. The gist of the new information was that the bones were neither fakes nor lost, but on loan to the Dinosaur National Monument in Utah. The plan was for the monument's paleontologist, Dan Chure, to do a definitive scholarly analysis and place the bones with a known genus and species of dinosaur. Unfortunately, he had yet to find time for the task. Enter Rebecca Hunt-Foster, a geology student at the University of Arkansas with an interest in paleontology. She was looking for a research topic, and one of her professors was none other than Doy Zachry, the student who had originally brought the bones to Fayetteville. He had completed a doctorate at the University of Texas and returned to Arkansas as a professor and naturally suggested the Arkansaurus. The bones were returned to Fayetteville for Hunt-Foster to study.

When the fossils arrived, she sat down

with them, pulling on a pair of cotton gloves. She took precise measurements, compared them to other finds—both directly and through photos, drawings and published descriptions. The result was her 2003 paper, "An Early Cretaceous Theropod Foot From Southwestern Arkansas," listing Dan Chure of the Dinosaur National Monument and Leo Carson Davis of Southern Arkansas University as mentors. It is the definitive scholarly analysis of the Arkansaurus remains. But those who had hoped for a positive identification of the genus and species were disappointed. According to Hunt-Foster, now a paleontologist living in Moab, Utah, there simply was not enough material to work from.

"We can kind of tell what family it belongs to," she says, "but not any resolution beyond that." Drawing an analogy, she explains that there are many kinds of dogs, from Chihuahuas to Great Danes. But all are dogs. Likewise, the Arkansaurus is a dinosaur. We just don't know exactly what kind. Possibly, we never will.

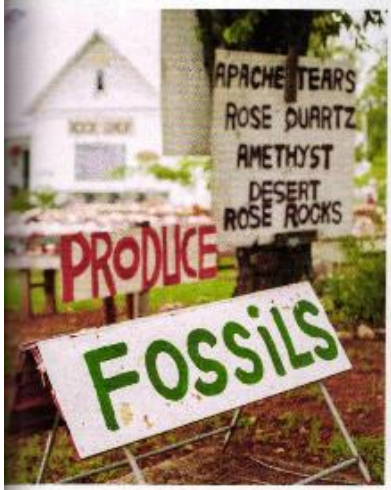
"There is something fascinating about science," Mark Twain said. "One gets such wholesale returns of conjecture out of such a trifling investment of fact."

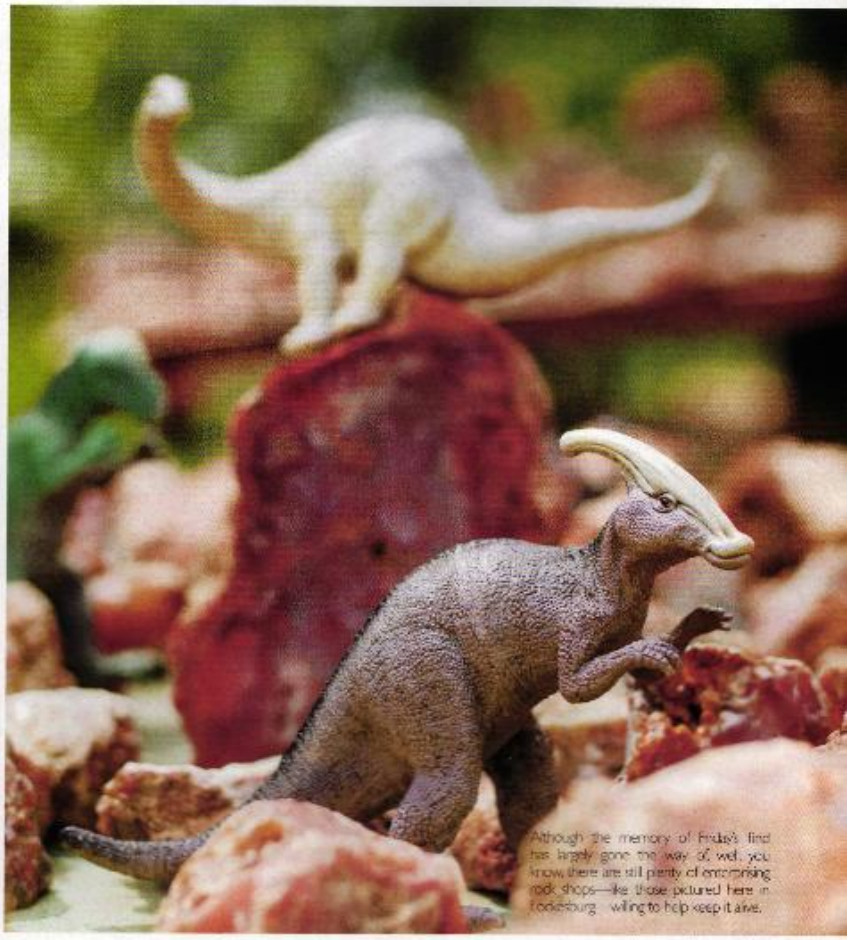
The facts of the Arkansaurus remain what they have always been—those foot bones pulled from the dirt of Sevier County in 1972. Today, the bones reside in air-tight metal cabinets at the University of Arkansas' Special Collections in Fayetteville, surrounded by sealed concrete flooring and two-hour fire walls. The temperature is 68 degrees, the humidity is 50 percent, and university police monitor the building every day of the year.

Back at the Arkansas Geological Survey's learning center in Little Rock, conditions are not so well controlled. The center's Arkansaurus replica, on close inspection, is beginning to show age. A tiny piece of the tail is snapped off, revealing Styrofoam beneath. A couple of small holes have appeared in the base of the display—rats. The big groups of schoolchildren don't even come to tour as much anymore, something Angela Chandler of the AGS chalks up to lack of school budgets for field trips.

Will a new replica of the Arkansaurus be made one day? Will the replica reflect the latest information on what the creature looked like? Will the Arkansaurus be covered in feathers like a giant ostrich, and perhaps even accompanied by a plaque showing an official genus and species?

Until that day, our knowledge of the strange creature will have to remain in a fog of uncertainty—fragmentary and mysterious, tantalizing yet ultimately incomplete. AL





Although the memory of Freda's find has largely gone the way of, well, you know, there are still plenty of enterprising rock shops—like those pictured here in Fodderburg—willing to help keep it alive.