Fossil hunting in coal mines

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At the northern tip of Colombia, Jonathan Bloch hunts for fossils in the midst of spontaneous combustion fires, noxious gases laced with foul-smelling sulfur, rock-shattering explosions, and some of the largest machines in the world.

"It is a weird place to work," Bloch admits, an associate curator of vertebrate paleontology at the Florida Museum of Natural History,

although he says he feels safe deep in the pits of the largest coal-mining operation in Latin America. "The miners' worst nightmare is having any one of us get hurt in there," explains Bloch, describing his hosts at the Cerrejón Company as "bend-over-backwards helpful."

Drawing Bloch to the site is the unique opportunity to explore what he calls "a new

window in time." As the miners dig down, they uncover layer after layer of fossils. Paleobotanists working at the site had previously discovered fossilized plants suggesting today's coal mine was once a tropical rainforest, and they invited Bloch to look for animal fossils. That will help them complete more of the picture of what the area was like a few million years after the dinosaurs died out.

"We found completely unexpected things," says Bloch, including an animal now known as "titanoboa," a dozen-meter-long snake that weighed about 1,000 kilograms. The enormous size of the snake suggests warmer tropics back then because higher temperatures allow poikilothermic snakes to grow larger, hinting at what is to come with today's global warming. "It happens in a geologic instant that snakes will max out in size based on whatever temperatures they're living in," Bloch concludes, noting the increasing size of pythons introduced to the warm Florida Everglades only a few decades ago.

On the continuing quest for coal, the Colombian miners have blasted through the rock so that the layers containing titanoboa fossils are almost gone. "You might say that is kind of sad," reflects Bloch, "but on the other hand, at what other place are they spending billions of dollars to expose fossils for us?" He laughs, responding to his own question, "I can think of only one other place: they're doing it in widening the Panama Canal for us, too," where Bloch is hunting for fossils 19–21 million years old.

Fires start spontaneously in Latin America's largest coal mine, where Jonathan Bloch (Right) and a colleague hunt fossils. Image courtesy of Alex Hastings.