



NATIONAL
GEOGRAPHIC

Explorer

Fossil Hunter

Digging into Italy's Prehistoric Past

National Geographic Explorer Dr. Federico Fanti is a paleontologist and sedimentary geologist. His work has included field work in Asia, Africa, North America, Europe, and Australia. His research focuses on the relationship between environmental changes documented in sedimentary rocks and evolutionary patterns seen in the fossil record. In other words—which species lived, which species died, and most importantly, why?

Fanti's interest in fossils started early. "As with many kids, I just fell in love with fossils when I was three or four," he says. "Usually this kind of passion vanishes as you get older. Quite the reverse for my life."

One of Fanti's greatest finds happened in Tunisia, where he discovered the largest sea-dwelling crocodile species found so far. It was almost 10 meters (31.5 ft.) long, and it was called *Machimosaurus rex*. Surprisingly, the fossils were found in 120-million-year-old rock. Many reptile species, including marine reptiles, had died out during a mass extinction 145 million years ago. The discovery of *M. rex* indicates that not all marine reptiles went extinct at that time.

Although *M. rex* may be Fanti's best-known discovery, one of his favorite memories from the field occurred in the Gobi Desert in Mongolia. "It was my first time in the Gobi," he recalls. "I ended up finding a dinosaur squatting in the center of a nest, with all the eggs lying underneath it. It was a lucky strike." The fossil was an oviraptorosaur, a small-bodied, feathered dinosaur. At the time, only five specimens

of nesting dinosaurs had been found worldwide, making this a very rare find.

Fanti is now studying the fossils of his home country, and in particular, vertebrates uncovered at the Villaggio del Pescatore site, in northeastern Italy. The fossils of a herd of 11 dinosaurs of the duck-billed species *Tethyshadros insularis* have been found there, including the biggest and most complete dinosaur skeleton ever found in the country. Fossilized fish, crocodiles, and flying reptiles have also been recovered, revealing what the Mediterranean area looked like 80 million years ago. ■

Thinking Critically

Scale, Proportion, and Quantity Fanti's fossil is 70 million years old. Compare that age with the age of the Great Pyramid of Giza, 4,600 years. Then, compare it with Earth's age, 4.6 billion years. How old is the fossil on the scale of human history? On the scale of Earth's history?



Top left Note-taking is an important part of Dr. Fanti's field work. | **Top right** The skull of a prehistoric crocodile is revealed after extensive work. | **Middle right** Fanti carefully removes rock and soil to extract a fossil. | **Bottom** Many important clues about Earth's past come not from the fossil itself, but from its surroundings.

▶ Watch our interview with Fanti and learn more about his career and research.

