FOSSILS

WHAT IS A FOSSIL?

A fossil is evidence of past life. They contain the ancient remains of plants and animals or traces of them. It can be difficult to determine whether a specimen is a fossil (evidence of past life) or not a fossil (a rock or something that appears to indicate past life but actually does not).

Fossil record leaves behind valuable information about the past. Scientists have been able to piece together prehistoric life through the remains of dinosaurs, plants, and invertebrates.

TYPES OF FOSSILS

There are several different kinds of fossils that form in different ways.

BODY FOSSILS

Body fossils are fossilized bones, teeth, claws and eggs.

TRACE FOSSILS

Trace fossils are fossilized traces and impressions like footprints, teeth marks, skin impressions, nests, burrows and poop.

MICROFOSSILS

We tend to think of dinosaurs, and their fossilized remains, as being very large. Although paleontologists do find and study enormous bones, they also learn a lot from smaller fossils. Microfossils are fossils that are very tiny (usually ranging from less than a centimeter to a few centimeters in size) often found in accumulations called microsites. Microfossils help us to understand the rest of the environment in which dinosaurs lived including what other animals lived at the same time. Microfossils, which collected in groups in ancient river beds (called microsites, can include things like teeth and jaws both from dinosaurs and other animals like lizards, salamanders and small mammals, turtle shell fragments, small bones and vertebra from a variety of animals, fossilized fish scales and more.

FOSSILIZATION

The process of fossilization occurs under specific conditions and in certain environments. Most organisms (including dinosaurs) never become fossils. Some organisms are more likely to become fossils because of where they live and what their skeleton or structure is like. Even when an organism is fossilized, the whole plant or animal may not be preserved. Parts of plants or animals may separate by wind, water, or predators before they are fossilized. When paleontologists find a fossilized toe far from a fossilized tooth, they may assume that they are from different animals when, in fact, they came from the same creature. The only animals and plants paleontologists know anything about are the ones that became fossils.

TYPES OF FOSSILIZATION

PERMINERALIZATION

Permineralization is fossilization where bone material remains and the spaces are filled in with minerals. Most dinosaur and other animal bones become permineralized. Both the structure and the original bone material are preserved.

PETRIFICATION

Petrification is when organic materials are replaced by minerals. When living material dies and petrifies, the material from the living object is actually replaced by minerals. The structure is maintained, but the material is entirely different. This is what happens to petrified wood.

DO YOU WANT TO LEARN MORE ABOUT FOSSILS?

- Book: Digging up Dinosaurs, Jack Horner
- Visit the "Paleontology Portal" [LINK] developed by the University of California Museum of Paleontology in collaboration with its Advisory Boards and funded by the National Science Foundation.