

Fossils

Fossils are the remains or traces of ancient life that have been preserved by natural processes, from spectacular skeletons to tiny seashells. Imprints, tracks and trails can also become fossilised, like dinosaur footprints or worm burrows. These are called trace fossils. Hence, a fossil can be defined as,

A remnant, impression, or trace of an organism of past geologic ages that has been preserved in the earth's crust

By studying the remains of life and the traces it left behind we can learn a lot about how animals and plants lived and behaved millions of years ago.

Types of fossils:

Fossils are the remains or traces of ancient life that have been preserved by natural processes. Examples of fossil include shells, bones, stone imprints of animals or microbes, exoskeletons, objects preserved in amber, petrified wood, coal, hair, oil, and DNA remnants.

There are five types of fossils:

1. Body Fossils
2. Molecular Fossils
3. Trace Fossils
4. Carbon Fossils
5. Pseudofossils

1. Body Fossils – Soft Parts

The first type, body fossils, are the fossilized remains of an animal or plant, like bones, shells, and leaves. These can be mould and cast fossils, like most of the fossilized dinosaur skeletons and big bones we see, replacement fossils, like petrified wood, or whole-body fossils – mammoths caught in the ice, or insects trapped in amber.

A mold is an imprint left by the shell on the rock that surrounded it. There are two types of molds. They are:

External Mold:

It is a mold of the outside of the shell. Each time we break a shell or bone out of the rock, an external mold is left behind.

Internal Molds:

Molds of the underside of the shell may be left on the surface of rock that formed when sand or mud filled the inside of the shell.

2. Molecular Fossils

Molecular fossils are often referred to as biomarkers or biosignatures and represent products of cellular biosynthesis that are incorporated into sediments and eventually into a rock. Many of these chemicals become altered in known ways and can be stable for billions of years.

3. Trace Fossils

Trace fossils are marks left by an animal or plant that has made an impression. These fossils include nests, burrows, footprints or any other markings of the animal's time on the earth. The structure of the animal or plant remains as a mineral form. The colours of the minerals that replace the form can be dazzling. Sometimes they are made into art and jewellery.

4. Carbon Fossils

All living things contain an element i.e. carbon. When an organism dies and is buried in sediment, the materials that make the organism break down and eventually only the carbon remains. The thin layer of carbon left behind can show an organism's delicate parts like leaves or plant e.g. fern fossil 300 million years old.

5. Pseudofossils

Sometimes watery solutions of various minerals seep through the sediments and it takes the shape of some plant part or animal. Their study shows that they are neither plants nor animals. Such fossils are called pseudofossils.