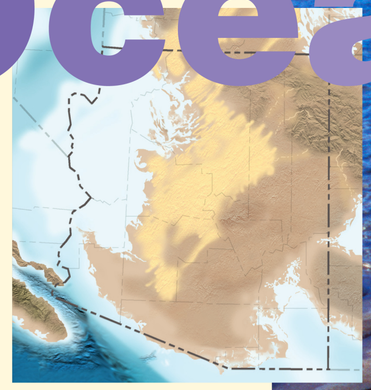
Oceanfront Property (in Arizona!)

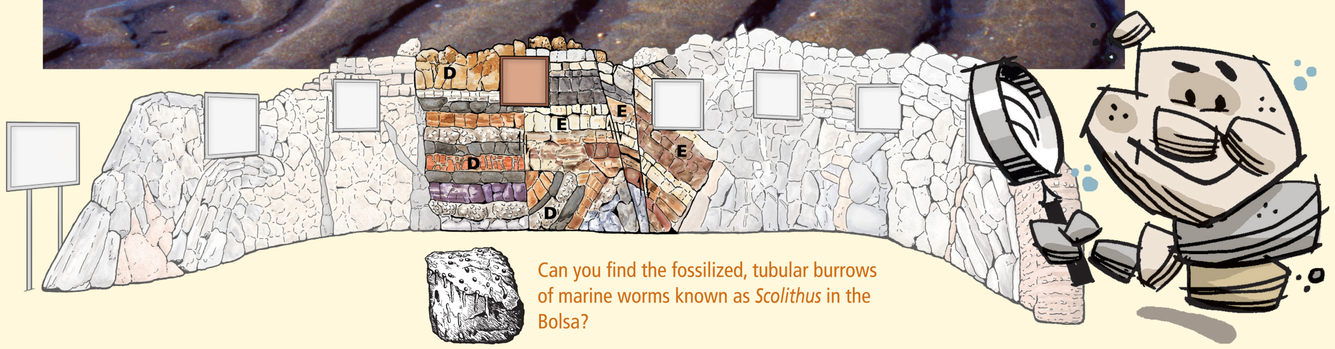
Arizona 370 mya



Arizona 318 mya

Lemmon Herbarium and its occupants, Oakland, California, 1895.

During the Paleozoic Era, 542–251 mya (mid-November to mid-December), seas repeatedly advanced and withdrew as the relative elevations of land and water changed. Sedimentary deposits were left in the form of sandy beaches and mudflats, and limey deposits of marine organisms where the waters were deeper. Oceanfront property was easy to come by in what would become southern Arizona. The mudflats and limey organic deposits laid down early in the Paleozoic Era are now the erosion-resistant shales and limestones of the **Abrigo Formation**. Noted for distinctive flat pebble conglomerates, the Abrigo strata are the result of ripped up layers of mudflats, the work of ancient ocean storms. The sands of long ago beaches that covered nearly all of western North America are preserved as Bolsa Quartzite. **Abrigo** and **Bolsa (E)** are the lowest horizontal layers below this panel and to the right.



Can you find the fossilized, tubular burrows of marine worms known as *Scolithus* in the Bolsa?

Layers of Time

During the middle to late Paleozoic, 416–251 mya, the oceans continued to come and go, but there was little or no crustal disturbance, resulting in a long period of relative stability and the laying down of successive layers of sediments. These limestone deposits, commonly several hundred feet thick, are the layers in which important cave systems such as Kartchner Caverns are found.

Kartchner Caverns, 50 miles southeast of Tucson

Starting with the earliest deposits, the bottom layers, and working up, are the:

- **Martin Formation** (Devonian Period, 416–359 mya),
- **Escabrosa Limestone** (Mississippian Epoch, 359–318 mya),
- **Naco Group**, comprised of the **Earp, Horquilla** and **Colina Formations** (Pennsylvanian Epoch and Permian Period, 318–251 mya).

The layers can be seen in horizontal bands to the right of this panel **(E)** and also in the tilted section further to the right. The faulting, tilting and metamorphism came later. The younger or Paleozoic sediments **(E)** originally overlaid the Precambrian layers **(D)**, but now they rest side by side.

Lady Mountain

The highest point in the Catalinas, Mount Lemmon (9,157 ft), is named not for the fruit, but for Sara Plummer Lemmon (1836-1923). An amateur botanist, she hiked to the top on foot and by mule on her honeymoon in 1881 to catalog the plants of southern Arizona.

An Era of Firsts

The Paleozoic is an Era of firsts—from the first vertebrates (fish) to the first land plants, from the first insects to the first amphibians, and from the first plants with seeds to the first reptiles. Coal swamps characterized much of the land, and the first forests of primitive fern trees and conifers flourished. But the end of the Era saw the mass extinction of up to 96% of all marine life and 70% of terrestrial vertebrates on Earth.

faulting: the movement which produces relative displacement of adjacent rock masses along a fracture