



Arizona Rocks 82

Text and photos by Ray Grant

Stromatolites are some the oldest fossils found on earth, some more than three billion years old. They are cyanobacteria, a microscopic life form, that form a layered deposit in salt water, and are still alive in limited locations today. They are found at several locations in Australia, the best being at Shark Bay in Western Australia where there is a special viewing area.

In Arizona there are a number of fossil stromatolite localities. I have seen them in the sedimentary rocks of the middle Precambrian (about 1.1 billion years old) in the Grand Canyon and Salt River Canyon. Recently, I have been told about some Miocene (about 8 million years old) stromatolites that lived in salt lakes in Arizona. Go to the Arizona Geological Survey for more information.

Fossil stromatolites are commonly used as a lapidary material. I have seen polished specimens from China, Russia, Australia, and the United States, so it is not hard to find stromatolite specimens if you are interested.



Living Stromatolites at Shark Bay in Western Australia (low tide)

Earth history

Microbial mats are the Earth's earliest ecosystems.

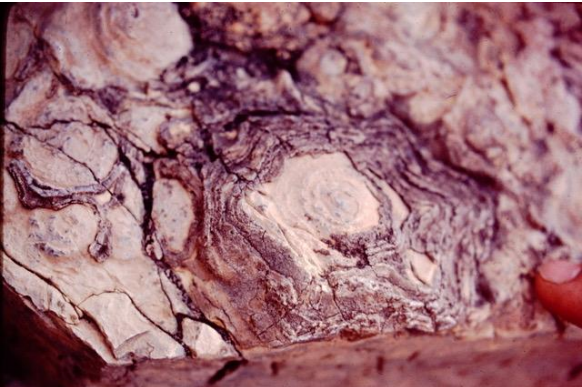
They have been around for over three billion years, more than 75% of the Earth's geologic history. Over the last two billion years cyanobacteria in microbial mats influenced evolution by breathing oxygen into the atmosphere.

During times of crisis, including the mass extinction ending the age of dinosaurs, microbial mats were among the last to be affected and the first to move into niches left empty by other species.

One of the many signs about the stromatolites at the Shark Bay viewing area



Special viewing area to see stromatolites at Shark Bay in Western Australia



Fossil Stromatolite (1.1 billion years old) from Salt River Canyon, Arizona



Sphere made from fossil stromatolite from Russia