During the late Devonian Period, the western part of the North American continent was located south of the equator and was generally submerged beneath shallow tropical seas. The lower part of the Martin Formation, the Becker’s Butte Member, contains sediments that were deposited in coastal plain environments as well as fossils of early land plants. At the Cholla Power Plant site, we find the upper part of the Martin Formation, the Jerome Member, which was deposited in a shallow marine shelf near the continental shoreline. It contains an abundance of shallow marine fossils, indicating that it was deposited after the sea encroached across the land surface.

**Brachiopods—Tenacious Survivors of Mass Extinctions**

Brachiopods are shellfish that secrete a shell consisting of two parts called valves. These valves are bilaterally symmetrical—the right half is a mirror image of the left half. This bilateral symmetry differentiates brachiopods from clams and other bivalved mollusks, with which they are sometimes confused.

The fossil record for brachiopods dates back to the early part of the Cambrian Period. They were extremely abundant, but were decimated in the Permian mass extinction. This event was the largest of all extinction events (larger than the major extinction 65 million years ago that killed off the dinosaurs).

Still, some brachiopods survived the Permian extinction (as well as subsequent mass extinctions). Their descendants live in today’s oceans, however, they have never achieved their former abundance and diversity.