

## Fossils from Garden Park-: clues to the ancient environment



Garden Park is best known for the dinosaur fossils collected by the two famous paleontologists of the mid to late 1800s, Edward Drinker Cope and Othneil Charles Marsh. But more recently, paleontologists have revisited the area and uncovered fossils that provide us with a window on to the ancient Late Jurassic environment, which was wet, moist and warm with large streams and flood plains. Most of the fossils found are not large like the dinosaur fossils, but instead are a mere few centimeters in length and represent plants and invertebrates that lived during the Late Jurassic period in Garden Park.

The plants and invertebrates fossils not only provide evidence for environmental change, but also reveal that different organisms – like plants and animals – evolve at different rates. During the latest Jurassic period, the climate became increasingly arid with periods of extended droughts and large death events of dinosaurs. This can be best seen at the Marsh – Felch quarry.

### ***Equisetum* sp.**



*Equisetum*, also known as the Horsetail, occurs in moist places such as riverbanks, lakeshores, ditches, marshes, and wet woodlands. *Equisetum* is a gymnosperm, which means that it is non-flowering, and dates back to the Paleozoic Era. The fossilized plant shown here was found on the west side of Four Mile Creek and represents the partial stem and nodules of *Equisetum*. Using what is known about modern species' of *Equisetum* helps us understand the ancient environment.

	
<p><b><i>Behuninia sp.</i></b></p>	<p><b><i>Steinerocaulis sp.</i></b></p>

*Behuninia sp.* and *Steinerocaulis sp.* are short shoots of species' of extinct conifer. Conifers are also a gymnosperm - they produce cones rather than flowers - and today can be found throughout the world. The majority of species are evergreens, but there are a few that are deciduous and shed their leaves each year. Conifers colonized the land more than 300 million years ago and were the most diverse and dominant tree in tropical forests: plant-eating dinosaurs relied on the trees for their diet.

### **Invertebrates**

Freshwater snails are also commonly found in Garden Park. Today, ephemeral streams flood the gullies and gulches, but there is no consistent water source where the fossilized snails are found – giving us clues to how the environment in Garden Park has changed since the Late Jurassic period. Note that this species of freshwater snail looks very similar to those found in the modern environment. Paleontologists study modern freshwater snails to understand what was happening in the ancient environment.

### ***Ampiovalvata scabrada***

