

LYNDALE PARK PEACE GARDEN

Rock Geology Information

The rocks at the Peace Garden are part of a rock unit known as the Oneota Dolomite. Oneota is a river (now known as the Upper Iowa River) in northeastern Iowa, near where this unit was first described. The Oneota Dolomite is found in various localities in southeastern Minnesota and in nearby parts of Iowa, Wisconsin and Illinois. It is especially prominent as the cap rock on the bluffs overlooking the Mississippi River near Red Wing. Dolomite (sometimes called dolostone) is a rock that is very similar to limestone and is composed primarily of the mineral dolomite. The chemical composition of the mineral dolomite is calcium magnesium carbonate ($\text{Ca Mg} (\text{CO}_3)_2$).

The rocks were formed from sediment that was deposited in a prehistoric ocean which existed in this area about 500 million years ago, during the Ordovician Period. This was before the time of the dinosaurs, the dinosaurs having been present during the Mesozoic era, between 65 and 230 million years ago. However, there were plants and animals living in the ocean during the Ordovician Period and their remains (fossils) may rarely be found in the Oneota Dolomite. The fossils in the Oneota include snails and stromatolites (structures built by blue-green algae.) Clams, brachiopods, cephalopods and trilobites are also present, but are even less common.

Some of the rocks at the Peace Garden contain large pores, called vugs, which were formed after the original sediment was deposited. Some of the vugs are lined with a crust of very small quartz crystals. This crystallized crust was probably deposited by quartz-saturated fluid that circulated through the rock. The deposition process is similar to how rock candy is deposited on a stick when it is placed in a glass of water that is saturated with table sugar.

Source of information:

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