



Rock Wall Self-Guided Tour

PORTER HOUSE MUSEUM | DECORAH, IOWA

This tour will introduce you to a selection of the most common—and most unusual—rock and fossil specimens included in Porter’s rock wall. The tour begins near the side gate on the East side of the grounds.

1. **Pedestal Specimen** This specimen displays solution pitting, hematite replacement of siderite (brown material on the lawn side), and drusy quartz (tiny pink crystals on the street side).
2. **Petrified Wood** In this specimen, the cells of the original wood have been replaced by the mineral silica. Often, the replacement in petrified wood is almost molecule for molecule, preserving the original structure of the wood. Many of Porter’s specimens are from the western and southwestern United States.
3. **Green Glass** inlaid in this pedestal may have been obtained from a glass factory in the San Francisco area after a fire following the 1906 earthquake. This green glass recurs frequently throughout the wall.
4. **Sphalerite (Zinc Ore)** from the Greek sphaleros meaning “deceiving”, because it can have many different appearances. Also historically called “black-jack” by miners.
5. **Calcite (white)** is found directly to the left of the pedestal. The pedestal contains a number of agates and some jasper (red).
6. **Banded Sandstone** In this sedimentary rock, the color staining probably follows the original layer of sediments from when this rock was formed.
7. **Yellowish-Tan Chalcedony** A micro-crystalline variety of quartz. Chalcedony can occur in a variety of colors, and has been used as a gemstone since ancient times.
8. **Native American Hand Axe**
9. **Drusy Quartz**
10. **Pyrite (Fool’s Gold)** is visible as a thin crust of fine crystal on the lower part of this shaly limestone.
11. **Fossil Algae** A spheroidal or “biscuit” shape produced by ancient marine algae over 400 million years ago.
12. **Fossil Colonial Coral (alysites catenularia)** A colonial coral of the Silurian Age, formed 420–400 million years ago, about 100 miles from Decorah.
13. **Obsidian (volcanic glass)** is formed by rapid cooling of molten magma (lava), which prevents the formation of crystals.
14. **Mottled Sandstone** The color variations are produced by local concentrations of the cementing materials (iron oxides) in this sedimentary rock.
15. **Petrified Wood** The wood cells here have been replaced by chert or tan chalcedony. It has less of a wood-like appearance.
16. **Artistic alterations** In this pedestal, Porter filled in some cavities in the agates with dyed plaster.
17. **Pillow Lava** The pillow structures are formed when molten basalt magma flows out onto the seafloor, like hot taffy in cold water.
18. **Dike (granite type)** in Igneous Rock (basalt) A “dike” forms when molten rock or sediment intrudes into a crack and crystallizes. Here, the dike is more resistant to weathering than the mass of the rock, and therefore stands out in relief.



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19. **Nautiloid Cephalopod** formed in the warm shallow seas that years ago. This squid-like creature lived in the first large hind as it expanded into a cone, in a fashion similar to the f covered this area more than 440 million living chamber and built partitions be- Chambered Nautilus.
20. **Mica Schist**, a glittery, metamorphic rock formed by the action of heat, pressure, and chem- ically active fluids on shale and siltstone during periods of mountain building.
21. **Geode** This massive specimen is lined with quartz crystals, and was probably obtained from the geode fields near Keokuk, Iowa.
22. **Sand Concretion** Concretions form between layers of sediment, usually before the rest of the sediments have hardened into rock. This one has been partially smoothed and rounded by Porter.
23. **Galena Lead Ore** also known as lead sulfide, is a mineral that occurs in the lead-zinc district of the Upper Mississippi Valley.
24. **Calcareous Tufa** Created by calcium carbonate deposited on branches and twigs, usually near the mouth of a spring. Examples of this may be found along the trails in the vicinity of Dunning's Spring and Malanaphy Springs.
25. **Ammonoid Cephalopod** These coiled relatives of the Nautiloid had complex patterns in the partitions between chambers.
26. **Botryoidal Hematite (iron ore)** called "botryoidal" or "grape-shaped" because of its characteristic bubbled, globular surface, which resembles grapes.
27. **Dog-toothed Spar (large calcite crystal)** Note the many other examples throughout the wall.
28. **Ripple-marked Sandstone** The symmetrical shape of the ripples suggests they were formed by waves of water rather than currents.
29. **Form of Dog-toothed Spar** Environmental changes during crystal growth produced a step-like appearance.
30. **Banded Chert** typical of the cherts found in the limestone of the Upper Mississippi Valley.
31. **Nautiloid Cephalopod** This cross-cut rectangu- lar section is an endoceras type showing partitions and chambers.
32. **Rose Quartz**
33. **Specular (reflecting) Hematite** An iron ore mineral found in the iron ranges of northern Minnesota and Michigan.
34. **Fossil Snails:** maculates formed about 460 million years old. A similar fossil is nearby to the right.
35. **Brain Coral:** a relatively recent specimen, formed about 2.6 million to 11,500 years ago.
36. **Petrified Wood**
37. **Solution Pitted Limestone**, probably from the local Galena formation.
38. **Tinted Plaster of Paris:** Porter had little compunction about including an occasional "faked" man-made specimen in his wall.