Bruce Dice
MINERALOGICAL MUSEUM

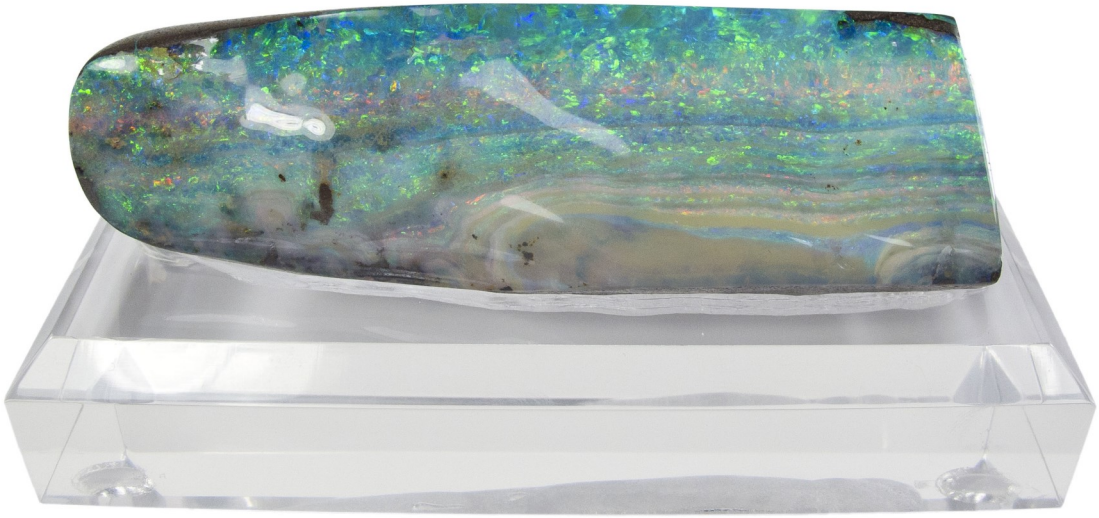
Mineral Spotlight: Opal

Unlike most other specimens in the museum, opal is not a true mineral. Instead of a crystalline structure, it is made of silica spheres packed together. The size and sorting of the spheres determines the appearance of an opal. Less sorted and smaller spheres create “potch,” a more opaque stone that is often fluorescent. In the museum, the Prase opal in case 17 is a potch opal. When well sorted, the sphere size determines the colors that the opal will show in its play on colors as different wavelengths of visible light are refracted. This visual effect is called “opalescence.”

Opal is essentially hardened silica gel, with the chemical formula $SiO_2 \cdot nH_2O$ and a water content of 5 - 20% by weight. Opals form from the deposition of particles in circulating silica-rich water, especially in hydrothermal settings like hot springs. This process can replace bone and wood, making opalized fossils.

Historically, opal was seen as unlucky after the publication of Sir Walter Scott’s serial novel *Anne of Geierstein*. In it, she dies after a drop of water falls on her opal amulet. It was also the patron gemstone of thieves because of the belief that it could grant invisibility.

Opal is most abundant in Slovakia, Ethiopia, Mexico, and Australia, where the museum specimens of boulder opals formed in ironstone cavities occur. In the United States, opal is most notably found in Yellowstone and Nevada.



This feature was posted on Dice Museum social media by Museum intern Josian Aardema on 5/16/2023.

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