

Case 12: Michigan Minerals

Highlights of this case include:

- Native silver intergrown with native copper
- Crystalline native copper
- Zoned selenite crystals from Grand Rapids
- Vibrant pink datolite amygdule*
- Polished specular hematite



Copper in Michigan: A Brief History

About 1.1 billion years ago, the continent began to split down the middle, causing an upwelling of basaltic magma at the spot that would become Michigan's upper peninsula. This rift, the Keweenaw Rift, would deposit sequences of thick flood basalts. During this volcanic activity, hot, dissolved-mineral enriched water was pushed through cracks and fissures in existing rock. This hydrothermal fluid deposited out native copper along with other elements like silver and arsenic. For this reason, many pieces of copper from the Upper Peninsula resemble what was once a void space in (a crack, gap, or bubble) in the surrounding rock. These mineral resources would first be mined by Native Americans between 5000 BCE and 1200 BCE. European settlers would later begin mining copper in the mid-1800s, and the industry thrived through the mid 20th century. In 1997, the last active copper mine in the Upper Peninsula closed.

Case Acknowledgements

- This case would not be possible without the generously loaned pieces from L. Lemmen.
- The Kona Dolostone is the sculpted work of local artist R. King.

*amygdule: deposit of mineral in a round void space in rock.



Bruce Dice
MINERALOGICAL MUSEUM

Images:

- 1. Silver** Minesota Mine, Rockland; Ontonagon County, Michigan
- 2. Copper** Centennial Mine; Houghton County, Michigan
- 3. Petoskey Stone** Petoskey, Michigan

Information from:

Mindat.org – The world’s largest online mineral database.

“Rock and Gem: The definitive guide to rocks, minerals, gemstones, and fossils” by Bonewitz, R. and the Smithsonian Institute, New York, NY: Dorling Kindersle. 2008.

“Simon and Schuster's Guide to Rocks and Minerals” – edited by Martin Prinz, George Harlow, and Joseph Peters. New York: Simon and Schuster, 1978.

For an introduction to the geology of Michigan, please reference:

***Geologic History of Michigan** by Prof. Kiril Spiroff, Mich. College of Mining & Technology

*available for reference in the Dice Mineralogical Museum

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