

# Wise Fluorite



## This New Hampshire Mine Is A Favorite Site For Eastern Collectors

by Ken Hollmann

Famous for its fine green fluorite, the William Wise Mine of Westmoreland, New Hampshire, has been a favorite site for generations of New England collectors. Located in the southwest corner of the state about 10 miles due west of Keene, it is the northernmost of a group of mines straddling the Westmoreland/Chesterfield town line.

The area has been a known source of fluorite since the early 1800s, but the material was not mined commercially until the end of that century. Parker Cleaveland's *Elementary Treatise on Mineralogy and Geology* (1822) lists light-green "fluat of lime" (the old name for fluorite) as coming from Westmoreland. The Wise Mine, discovered in the late 1890s, was worked sporadically until about 1919. Other properties in the area were active until the late 1930s. Between 1911 and 1938, shipments from all mines amounted to 7,500 short tons, with

the greatest production occurring in 1917-18.

The Wise Mine and others in the group are located near the contact of the Oliverian gneisses and Ammonoosuc Volcanics. Quartz-fluorite veins exhibiting a comb structure with distinct banding were deposited along preexisting faults having a NNE strike. Quartz was the first to form on the walls, followed by fluorite and mi-

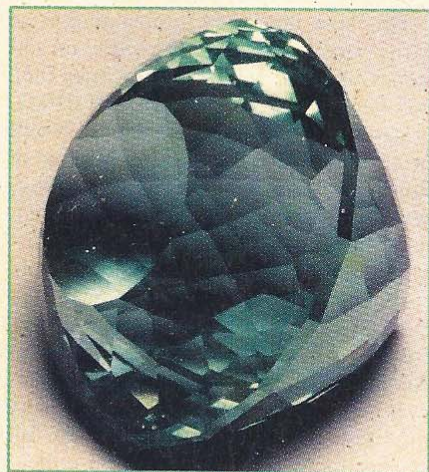
ica, and is rarely excelled elsewhere." Other experts consider it the best material of its kind worldwide.

There are two generations of fluorite found at the Wise, either separately or in combination. The first generation is characterized as deep-green, unmodified octahedra, sometimes having a bluish cast. The second generation is light-green to pale-blue and colorless, in the form of octahedra often with cube modifications.

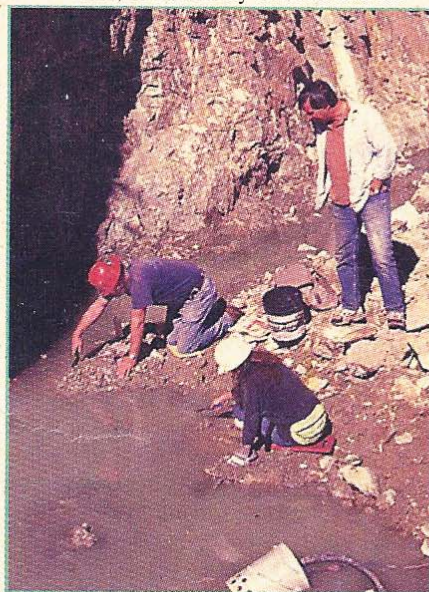
Studies have shown that fluorite crystallizes as octahedra at higher temperatures, but as the temperature of formation drops, the habit changes to cubic. Many of the deep-green crystals are completely enclosed by the later-generation fluorite, giving them a rough, stepped surface. Others are only partially coated, resulting in very striking specimens. Under short- and long-wave ultraviolet radiation, the fluorite fluoresces blue, the darker-green material having the strongest response. It is not known for certain which activator is responsible for the fluorescence, but recent analysis has shown yttrium to be, by far, the major rare earth element present. The fluorite's beautiful green color is also thought to be caused by yttrium.

Most early collecting efforts at the Wise entailed working the dumps. In 1967, John Marshall of Massachusetts decided to revisit the locale after having long admired a choice piece in his cabinet that he had collected in the late '40s. John's initial efforts were encouraging. On his fourth visit, he was joined by fellow collector, Shields Flynn. Their hard work resulted in some spectacular pieces weighing up to 76 pounds. An excellent account of their finds appeared in the March 1969 issue of *Rocks and Minerals*.

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Portuguese-cut fluorite  
by Bob Borofsky. 125 carats.



In spite of the water, miners search diligently for fluorite at the Wise Mine.

nor amounts of barite and sulfides.

The Wise is the only mine in the district to produce the splendid deep-green, often flawless crystals that are in such high demand by mineral and gem collectors. In *Gemstones of North America*, John Sinkankas states, "The color is exceptionally pure and rich, and is reminiscent of the hue of emerald. The beauty of this material has no peer in North Amer-