magnesium oxide-poor cratonic (granite and quartz-rich sediment) sources.

Possible precursor minerals include magnesium oxide-rich salines and magnesium oxide-rich volcanogenic materials, but there is no supporting evidence for either type of precursor in the local (upper) section where the argillite with the highest percent magnesium oxide occurs.

Some of these rocks were dolomitized following deposition. Could such a process produce magnesium oxide-enriched smectitic clay (a more conventional view is that such dolomite develops from magnesium expelled from the smectite)? Is 11 percent magnesium oxide-enriched clay not unusual in epiclastic sediments? Is there anybody out there with an answer?

MINE VISITED IN WESTERN NEVADA

The recently-opened Paradise Peak mine (FMC Corp.) is producing ore from one of several high-level, epithermal, precious-metal deposits located in the Tertiary volcanic rocks of the "Walker Lane" of western Nevada. The following brief is from notes taken by **Dick Hardyman** (BCMR) during a tour of the mine in June 1986.

The silver-gold deposit is composed of two roughly stacked ore bodies hosted in silicic ash-flow tuff. The stratigraphy of the mine consists of a composite ash-flow tuff unit (main ore host) overlain by an erosional remnant of andesite which contains a local pod of multilithic "hydrothermal" breccia that does not continue at depth but pinches out in the composite tuff unit. The composite tuff unit overlies an "opalite" layer (very fine-grained quartz rock grading laterally outward into good opaline silica) that in turn overlies a lower pumice tuff unit. The base of the section is a latite lava unit.

The upper ore body (silver/gold = 20:1) is hosted in the breccia unit and surrounding composite tuff; the lower ore body (silver/gold = 75:1) is hosted in the composite tuff (upper half of ore body) and the opalite zone (lower half of ore body). Combined, the two ore bodies contain 12 million tons of ore averaging about 3.5 oz/ton silver and 0.1 oz/ton gold (see however, Silberman and others, 1985, Reviews in Economic Geology, p. 211 for other quoted figures). The ore also runs about 0.25 - 0.5 oz/ton mercury that occurs as fine-grained disseminated cinnabar. The ore contains traces of chalcopyrite and sphalerite, essentially no molybdenum, and about 3.5 percent fine-grained pyrite.

There are very few veins in the deposit. The rocks in the main ore zone are intensely silica flooded. The fine-grained silica alteration grades laterally and upward into quartz-alunite-kaolinite altered rock typical of high-sulfur systems. The age of mineralization (based on one alunite date) is about 18.5 m.y.

MIDCONTINENT STRATEGIC AND CRITICAL MINERAL PROJECT UPDATE

P. K. Sims (BCMR), **E. B. Kisvarsanyi** (Missouri Geological Survey), and **G. B. Morey** (Minnesota Geological Survey) have authored a report titled "Geology and metallogeny of Archean and Proterozoic basement terranes in the northern midcontinent, U.S.A.: An overview." They conclude in the report that the 1350-to-1480- Ma anorogenic terrane in southern Missouri and adjacent parts of Kansas and Arkansas is favorable for the occurrence of a world-class Olympic Dam-type deposit (Roxby Downs, South Australia; 2 billion metric tons of copper, uranium, gold and silver ore).

The midcontinent region has many of the major geologic features characteristic of the Olympic Dam area: (1) voluminous Middle Proterozoic anorogenic plutonic rocks in a stable region along the southern margin of the Precambrian craton, (2) major transcurrent shear zones, (3) one or more grabens that formed concurrent to or after the anorogenic magmatism, and (4) known iron-rich sedimentary and igneous rocks.