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Spectacular Diaspore from Turkey

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Even a confirmed NYS collector occasionally gets excited about minerals from elsewhere. For me, some of the most interesting new mineral specimens are the gemmy diaspore V-twins from near Pinarcik, Mugla, Turkey. Dr. Murat Hatipoglu from Dokuz Eylul University and I have written a detailed description for future publication in *Rocks and Minerals* which I will summarize here.

Gem rough and faceted stones of diaspore with outstanding color change (green in daylight and lavendar to peachy red in incandescent light) began showing up on the internet several years ago. More recently, large V-twins have been offered for sale. A very few fine diaspore specimens, one of which I think may be the finest diaspore yet found, turned up just last year.

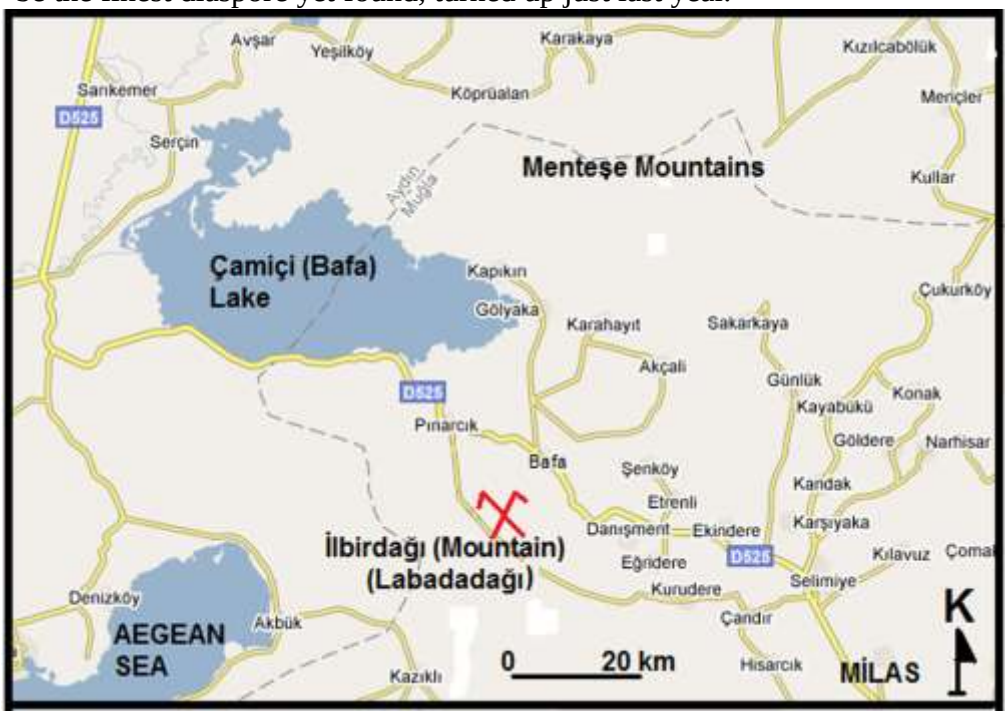

Figure 1. *Map showing the location of the gem diaspore locality southeast of Pinarcik, near Mugla in southwestern Turkey.*

The specimens are coming from a metamorphosed bauxite deposit in the Menderes Massif in southwestern Turkey (fig. 1). Two openings have been made on Little Pine Grove Hill (Kucuk Camlik Tepe) and Big Pine Grove Hill (Buyuk Camlik Tepe). The metabauxite deposit was discovered in 1949 and first mined for aluminum ore in 1962. Initially, the government issued licenses only for bauxite, so any gem diaspores had to be collected surreptitiously, and some gem rough was exported between 1978 and 1982. In 2005, new mining laws led to a private mining company, Zultanite Gems LLC, Inc. reopening the mine on Little Pine Grove Hill for zultanite, a proprietary name for gem diaspore that permitted them to secure a mining permit. Now gem rough can legally be produced, but mineral specimens are still collected surreptitiously!

Outstanding V-twins of translucent to transparent diaspore occur singly and in clusters with calcite crystals, muscovite crystals, chlorotoid crystals and earthy goethite in high temperature hydrothermal veins. The veins fill nearly vertical fractures in a zone along the contact between the metabauxite and enclosing marble. The mineralized zone appears to extend for at least a mile. The accessory minerals appear to form presentable mineral specimens, especially the chlorotoid crystals, but virtually none are being collected and preserved. Most of the diaspore crystals are broken free from the matrix and end up as crystal sections, singly-terminated crystals, or occasionally V-twins with contact plane (061). Only a few larger specimens have escaped this process, and they show complex and very aesthetic three-dimensional arrangements of V-twins on matrix.

Figure 2. Jeff Scovil's photograph of the Gail Spann diaspore. The 9 cm by 5.6 cm specimen appears greenish-grey in daylight.

Figure 3. Stuart Wilensky's photograph of the Gail Spann diaspore in a different orientation. The specimen appears lavender in incandescent light.

The discovery of two twin laws in diaspore post-dates Goldschmidt's *Atlas der Krystallformen* and was made on microscopic diaspore crystals from metabauxites (diasporites) in France. To my knowledge, the Turkish V-twins are the first macroscopic twins ever found. One absolutely spectacular specimen was secured by Leonard Himes of Minerals America and sold to Texas collector, Gail Spann. Figures 2 and 3 show two photographs of the same specimen in two different lighting conditions and illustrate the color change.

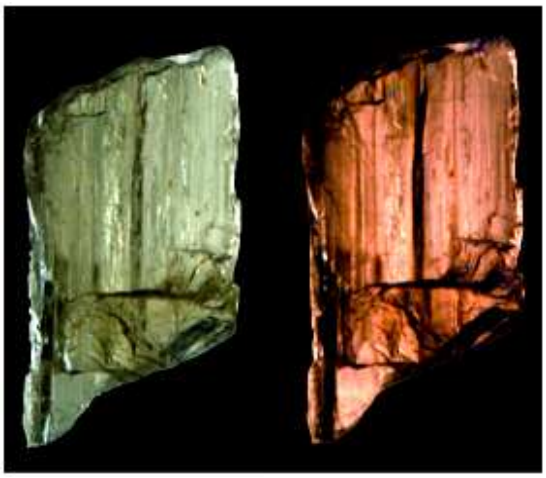

Figure 4. Color change in Turkish diaspore. This gemmy, 4.5 cm cleavage fragment appears green in daylight (left), but rose red in incandescent light.

Steve Chamberlain specimen and photos.

Color change in diaspore seems to be caused by traces of chromium in the presence of ferric iron. The iron largely causes the olive-oil green color in daylight and the chromium causes the color change. The daylight color is most often green, but can also be colorless, light green, pale amber and brown. The incandescent-light color may range from lavender to champagne to rose red and orange-red. Longer wavelength (lower wattage) incandescent illumination often intensifies the color. Figure 4 shows a gem-quality cleavage of a Turkish diaspore crystal photographed in daylight and incandescent illumination. The color change is striking.

Collectors can only hope that the high prices garnered by diaspore specimens from this locality might drive their greater production. Look for these interesting specimens on the Internet and at mineral shows.