

02/21/06 West side board meeting minutes

Ed Lehman opened the meeting at 7:35pm

Kathy gave the treasurer's report.

Kathy was asked by the bank that she provide documentation that the board had authorized her to move the Key Bank accounts to another bank. A motion was made, seconded, and passed that Kathy be given the authorization by the board to do so.

The WSMC received a letter from the DNR informing us that the taxes on the Walker Valley lease were accidentally left off the bill for the lease. They request that the taxes be paid as soon as possible.

Old business

Nominating committee: The West side board needs to nominate a 2nd VP and a secretary.

The East side board needs to nominate two trustees

Wagonmaster

Ed reported that the summer trip to Oregon and Northern California is generating a lot of interest.

A new obsidian locality was discovered five miles south of the Hwy 20 and 395 intersection near Riley, Oregon. An undeveloped rest stop was built right on top of an obsidian outcrop. Green sheen and "black goldstone" material can be found here. The locality is too small for a large group but Ed suggested that those interested could stop at the site on the return leg of the field trip.

The tentative schedule for the field trip is to spend two days at the Davis Creek obsidian locality near Davis Creek, CA. Two days at the Spectrum mine sunstone locality near Lakeview, OR. And spend one or two days at the Maury Mtn moss agate locality.

Mike is working hard on obtaining access to the rhodonite locality on private land.

Stu reported that the DNR has been supplied with more locks for the gate at Walker Valley.

Ed reported that access to the Lake Wenatchee area garnet locality may be restricted to groups smaller than twelve. This is based on the regulations governing the size of groups in the wilderness.

The Longview fiber has informed us the the Green Mountain/Kalama area is temporarily closed for the spraying of bio-solids (sludge). The closure will last until mid March.

New business

Ed will need some help at the Everett show manning the WSMC map table.

Ed will have a display case at the show containing material from the various field trips planned for this year. He will have examples of rough, cabbed, and faceted material.

Meeting adjourned,

Submitted by Glenn Morita, Secretary pro-tem

Disorderly Opal

by Bill Cordua, University of Wisconsin, River Falls

Minerals are crystalline solids, having regular long-range arrangements of their atoms repeating predictably in three dimensions. But there are a few substances, called "mineraloids" which have mineral-like occurrences, properties and consistency of composition but not a long-range crystalline structure. One of these is opal. Opal, a hydrated form of silica with variable amounts of included water. It is often described as amorphous (literally "without form"). Recent studies have clarified opal's atomic nature, subdividing it into categories, such as "opal-CT", that read like an alphabet soup. Recent articles, such as one on the origin of thunder eggs from Colorado (Kite, 2002), use these terms, so it is worthwhile finding out what they mean.

Opal's lack of long-range atomic structure is verified by its response to x-rays. When x-rays pass through a mineral, they are affected by that mineral's internal atomic structure. When the x-rays emerge, they make a pattern that is recorded on film or graph paper and reveals the mineral's internal symmetry. In opal, the pattern that emerges is diffuse and not very regular. But "not very regular" is not the same as "random". Some opals do show a short-range arrangement of their atoms. This allows subdivision of opals into categories based on the type and extent of this order/disorder. The pattern in opal apparently consists of small spheres or chains of linked Si and O atoms. These structures are surrounded by more silica in a gel-like matrix. The arrangement of the spheres is similar to that of some high temperature forms of SiO₂, namely cristobalite and tridymite. The type of material found in the opal is the key to the alphabet soup.

Opal A is opal that is truly amorphous, having little if any arrangement of atoms. Much gem opal is of this variety. Opal AG is the least structured, being all amorphous gel (= AG. Get it?). Opal AN has a vague network structure in the gel. A lot of hyalite opal, thought to form as vapor condensate, is of this type.

Opal CT has intermixed tridymite and cristobalite structure along with unstructured gel. It gives broad x-ray patterns, so at least is 'aspiring' to true crystallinity. Lots of common opal and some gem opal are of this variety. Within this is Opal CTm (massive structure), opal CTp (platy structure) and opal CTf (fibrous structure). In case you are wondering where the 'f' came from, (or what the 'f' is going on) this fibrous structured opal has been termed "lussaite".

Opal C has a pattern dominated by a diffuse structure resembling cristobalite. Agate at the base of Uruguay amethyst geodes has some of this, so many of you have specimens of this.

Over time opal becomes less disorderly. Its structure is not one that will last, as the atoms are more stable when arranged in a real crystal structure. Burial with moderate temperatures and pressures speed the breakdown process. Eventually opal passes from Opal A to Opal CT to fine-grained quartz or chalcedony. Much chert was probably common opal at one time or another. This nomenclature allows mineralogists who study opal to focus their attention of various types. Each type of opal has its own conditions of formation, and its orderly to disorderly pattern is often a window to those geological conditions.

References:

Graetsch, H., 1994, "Structural characteristics of opaline silica and microcrystalline silica materials in Silica: Physical Behavior, Geochemistry and Materials Applications", edited by P. Heaney, et. al., Reviews in mineralogy, vol. 29, Mineralogical Society of America, p. 209-232.

Kyle, Dan, 2002, "Occurrence and genesis of Thunder eggs containing plume and most agate from the Del Norte area, Saguache County, Colorado", Rocks and Minerals, vol. 77, p. 252-268.

via eTumbler, 02/06; via Breccia, 11/05; via Rock Ramblings, 9/05; via Rockonteur, 8/05; from Leaverite News, 2003

Field trip report

Harley Waterson, BC Lapidary

January trip was supposed to be a trip to Yale bar. Since the weather was very mild and rainy the water level at Yale bar was too high to access the bar.

So, just in time for the February trip, the weather cooperated, and stopped raining. The water level dropped enough to get onto the bar. The day was about as perfect as we could ask for! Just above freezing, light clouds, and no wind!

Most of the Yale bar rocks were clean from the month of rains, so pickings were fine. About 30 people joined the trip, including some new members. I saw two pieces of jade that were found, plus a very nice thulite. Very nice bright pink in the dark green!