Minutes of the 02/17/04 Westside Board Meeting

President Stu Earnst opened the meeting at 7:45PM.

Kathy read the treasurer's report.
Bills were submitted for stamps and toner for the copier.

Old business:
The signs for Walker Valley are in the process of being made. Apparently the shop has run into some sort of snag. Stu has not had a chance to talk to them to find out what the issue is.

New business:
Norma has been unable to fulfill her duties as secretary so Judy has volunteered to fill in for a couple of months.

Wagonmaster Report:
Ed is waiting for feedback on the trips. He needs club members to volunteer as trip leaders

The Canadians are working on putting out their list of summer trips

The board approved reprinting map books for sales at this year's show. Ed needs help with putting the map books together. Ed also is running short of material for the rock collections he makes for the school programs. His most critical needs are: small apache tears, single quartz crystals, red jasper, calcite, and pyrite. He will also accept most any other material.

The Marysville trip to Walker Valley was attended by about 25 people. Once again the most productive area was covered by the brown rock but enough was exposed that most folks got some good material.

Bill Snell won't be able to lead the First Creek trip on 7/24-25 so we'll need a volunteer

A gate sitter is needed for the Kalama trip on 4/24-25.

The road to Peek-a-boo Lake is blocked by a washout. The Forest Service likely will not repair the road since it is on their list of roads to close. This will add another 2 miles to the hike to the thunderegg locality.

Meeting adjourned,
Submitted by Glenn Morita

From an e-mail from Ed Lehman.
Subject: STOLEN CRYSTALS

Date: Fri, 30 Jan 2004 04:36:51 GMT

Greetings all....This is Bob O'Brien... I am on leave from Iraq for the next week and a half.

The purpose of this is let you know that while I was on active duty in Iraq in the Army, someone entered my property and broke into my house and storage building and took every last rock and crystal that I have collected in the last 15 plus years. They also took identification information, 5,000 board feet of lumber, an 18 inch slab saw, sliding glass doors, Anderson windows, speakers, a Highland Park cabbing machine, a large tumbler and extra barrels, arbors and expandable drums and everything else they could load up and haul out.

Among the rock there was 70+ crates of thundereggs, jaspers and agates, pet wood , talc.

Among the crystals there was Calcite from Gallatin Gateway min. 10 boxes.

Mostly large cabinet specimens not cleaned. Quartz from Big chief, spruce, green ridge and Peterson Mtn.

There was also 5 or 6 - 5 gallon buckets of choice Holley Blue.

There was also Walker Valley and several flats of Rock Candy.

If any of you see any of this entering the market would you please notify the Island County sheriff.

Thanks
Bob OBrien

Sunstone of the Vikings?

The mineral Cordierite is thought to be the source of the famous sunstone of the Vikings, who, in the ninth century, were expert navigators. Without benefit of compass, Viking sailors managed to ply their watery routes of conquest and commerce, navigating by the stars at night and the sun during the day. No matter what the weather, according to ancient Scandinavian sagas, the sun could be located with the aid of the magical 'Sun Stone'. Summarizing sun stone lore in a recent article in the archaeology magazine 'Skalk', a Danish Archaeologist Thorkild Ramskau, lamented that none of the sagas clearly described the sun stone. 'But there seems to be a possibility,' he wrote, 'that it was an Instrument which, in cloudy weather, would show where the sun was.' Now, with a clue supplied by a young archaeologist enthusiast, Ramskau has discovered the secret of the sun seeking stone of the ancients.

To the ten-year-old son of Jorgen Jensen, chief navigator of the Scandinavian Airlines System, the instrument described in 'Skalk' sounded like the twilight compass used by his father at higher altitudes, where the magnetic compass is unreliable. The twilight compass is equipped with a Polaroid filter that enables a navigator to locate the sun, even when it is behind the clouds or below the horizon,son's observation Jensen passed it on to Ramskau, who immediately recognized its scientific implication. Enlisting the aid of Denmark's Royal Court Jeweler, the archaeologist collected minerals found in Scandinavia whose molecules are aligned parallel to each other just as the crystals are in a Polaroid filter. Ramskau found one of these minerals, a transparent crystal called cordierite, turned from gray to violet-blue whenever its natural molecular alignment was held at right angles to the plane of polarized light from the sun. Thus, he reasoned, a Viking could have located the sun by rotating a chunk of cordierite until it turned blue.

Putting cordierite to the test, Ramskau accompanied navigator Jensen on a S.A.S. flight to Greenland keeping track of the sun with his stone while Jensen used the twilight compass. His observations were accurate within 2 1/2 degrees of the sun's true position, and he was able to track the sun until it dipped seven degrees below the horizon. 'I now feel convinced,' Ramskau concludes, 'that the Vikings, with the aid of there sun stones, could navigate with enormous accuracy.'

Editor's Note: Cordierite is known in the gem trade as Iolite.
From Golden Spike News, 7/03
Via Stone Age News, 1/04

A Synopsis On Tektites

by Chuck DeFlorin
Minnesota Mineral Club Member

Tektites, in the simplest terms are pieces of natural glass. Most scientists today think that they are the melt products of terrestrial rocks formed by hypervelocity impacts of large extraterrestrial objects. Some tektites resemble obsidian (the commonest natural glass on earth) in appearance and chemical compositions. However, there are several distinguishable differences. Microscopically, tektites resemble glass more than obsidian in that they are almost entirely devoid of any mineral crystals in their composition. Unlike obsidian, tektites have a very low water content (about 1,000 times less), a low alkali content and they always contain Techatelierite (pure silica glass). They also often contain Coesite (a dense polymorph), nickel-iron spherules and Baddeleyite (Zircon oxide mineral produced at very high temperatures during shock metamorphism), which lend evidence to a meteorite impact origin. Obsidian when heated will foam from the gasses and water that it contains, whereas tektites at the same temperature will produce only a few bubbles. Tektites are made of a glass that melts at a far higher temperature and it is far more viscous.

Scientists are still divided as to the origin of tektites. Some believe that volcanic activity on the moon is involved in some part of their formation. However, the return of the lunar material from the Apollo missions in the late 60’s provide evidence that tektites are compositionally unrelated to lunar material. Most believed that tektites form through some mechanism during the impact of a meteorite or comet.

When the meteorite or comet nuclei hits earth, it is believed that the material, soil and rocks are liquefied, or vaporized and then ejected from the area forming a splash field (strewnfield). Professor Bouska explains it as: "An enormous body with a volume of several cubic kilometers is racing towards the earth. The uppermost layers of the earth’s surface are melted by the highly compressed hot air cushion in the front of the flying meteorite prior to its contact with the surface of the earth. At the moment of impact, there is a tremendous explosion comparable with a multiple hydrogen bomb, the atmosphere is torn apart, and tektites are formed in the vacuum bubble. The fusion process and the throwing out of the tektite glass material occurs in a very short time period prior to the actual impact of the meteorite."

Some scientists are saying that the tektites were in a liquid form and shaped in the atmosphere in flight. They say that the bubble of atmosphere created by the impact provided a wind resistance free path for the liquid material to travel through. Without this bubble, any material would be slowed down very quickly, thus precluding the possibility of reaching a high altitude and long distances from the impact crater.

Tektites are found in only four major strewnfields. Strewnfields are the areas over which chemically and physical related tektites are found. The four major strewnfields are: the Australasian, Ivory Coast, Czechoslovakian, and the North American strewnfields. The assignment of a strewnfield is based on the unique meteorites hitting unique rock types with the combinations producing particular effects.

The Australasian strewnfield covers approximately one tenth of the earth's surface. This tektite area encompassesmost of Southeast Asia, including Vietnam, Thailand, southern China, Laos and Cambodia. It also stretches across the ocean to include the Philippine Islands, Indonesia, Malaya and Java. It reaches far out into the Indian Ocean and includes the western side of Australia. The source impact crater should exist within the strewnfield, but none has been found yet. They have a pretty good theory, but are still investigating it. They think the impact crater site is the "Tonle Sap," a relatively long lake called Grand Lake in Cambodia. The theory is that the impact site was caused by an object a few kilometers in diameter moving from the northwest to the southeast at a low angle.

The Ivory Coast strewnfield is the smallest and least explored of the four fields. The strewnfield is located on the western coast of Africa and extends out into the Atlantic Ocean. These tektites are extremely rare because of the difficulty in recovering them from the dense forested areas. The Ivory Coast tektites are linked geographically, chronologically and geochemically to the Bosumtwi Crater in Ghana. They have concluded that this crater is 1.3 million years old, quite new compared to the other three impact sites.

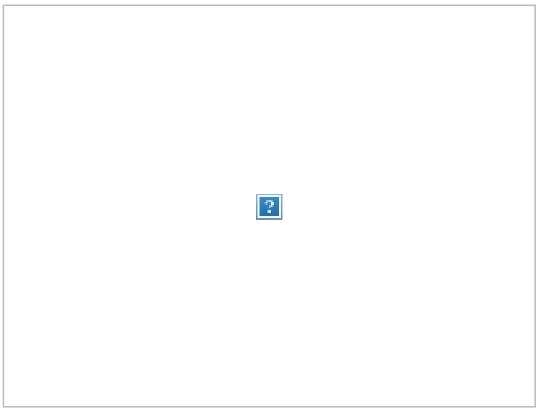
The Czechoslovakian or more commonly called Moldavite strewnfield was made by two different comet impacts that hit at the same time in Germany and date back 14.7 million years ago. the two craters that were formed are called the Nordlinger Ries and the Steinheim. Each produces a different kind of tektite. The Nordlinger Ries tektite is a bottle green color and is called Moldavite, while the Steinheim tektites are brownish in color. This strewnfield is quite small by comparison to the other three sites.

The North American Strewnfield is located in the southeastern United States and extends to Texas. It also includes areas of the Caribbean Sea, Barbados and the upper continental slope of the western Atlantic Ocean. There are two kinds of tektites here, one in Texas - Bediasites which are opaque and black in color. The other kind being the Georgiatites, which are translucent and very light green in color. Both kinds originated from a single but heterogeneous source based on chemical, isotopic and age data. The impact crater for the North American tektites is located in lower Chesapeake Bay of Virginia. It is 85 to 90 kilometers in diameter and considered to be 35 million years old.

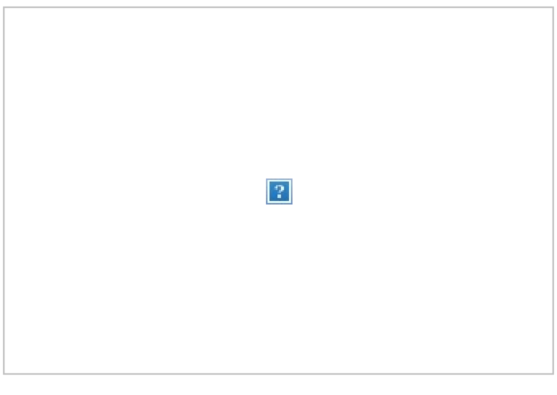
Tektites have a wide range of forms but are mostly tar black in color. There are a few exceptions like the Moldavites and Georgiatites, which are green in color - caused by iron in combination with aluminum. The rich green color of the Moldavite makes it the only tektite with gemstone clarity, and is cut into faceted stones. There are some tektites which are brownish, like the Bediasites of Texas, but most are black and not brown color.

The shapes of tektites can be teardrop, dumbbell, spheres, rods, discs and all types of irregular forms. In Australia, they can be found in an aerodynamic button shaped or flying saucer shaped. The different shapes areformed from rotation of the viscous melt in the atmosphere. When the tektite (in its liquid state) flew through the air spinning at a slow rotation, it formed ovals and rods. If the rotation was fast, it formed dumbbell shapes and at the fastest rotations teardrops were formed. If there was no rotation, spheres were formed. Some tektites often times contain bubbles and these bubbles contain a near vacuum. All of the common tektites shapes have been successfully reproduced in high-speed tunnels called Aerodynamic Tunnels by the injection of viscous melt.

via The BEMS Tumbler 2/04; from the Rock Rustler's News, 11/98



Australites



Moldavite

Indochinite "dumbbell"

Diamond model reveals new sparkle

A computer simulation of the complex way in which diamonds scatter light could change the way they are cut. The simulation shows how unconventional designs will look without having to experiment on real stones and risk ruining them.

Diamond cutters usually stick to a narrow range of shapes known to produce specific optical effects. This conservative approach places limits on the way an irregularly shaped rock can be cut into smaller pieces without waste.

"If this leads to a whole new palette of cuts, it would be great," says Maarten de Witte, a diamond cutter at Hearts of Fire, a diamond dealer based in Boston, Massachusetts. "Research on a laptop beats the heck out of cutting up lots of diamonds."

Brilliance, fire and sparkle
The simulation program models variations on the most common diamond shape called the round brilliant, according to Mary Johnson, a researcher at the Gemological Institute of America (GIA) in Carlsbad, California, who helped to develop the simulation.

Three characteristics define a diamond's attractiveness: "brilliance", or the pattern of white light produced by the stone; "fire", or the pattern of coloured light produced by the stone; and "sparkle", which is the way these patterns change with movement. They are all highly sensitive to small changes in the shapes and sizes of facets, which is why cutters are so conservative.

Ray tracing
Johnson's team at the GIA first had to work out how to set up the simulation to most accurately reproduce these characteristics. They decided that brilliance is best simulated by tracing the rays from a bright hemisphere of white light surrounding the diamond into the eye, but this will not work for simulating fire.

White light is broken into its constituent colours most strongly near the edges, where two faces meet, just as it does in a prism. To model this, the best illumination is a bright spotlight.

Sparkle has proved even more difficult to simulate. The sparkle of a diamond is not as well understood as fire or brilliance, which means that tracing light rays is not yet an option.

Johnson presented her team's results at a Materials Research Society meeting in Boston. She says they show that at least one new pattern of faces could look as attractive as a conventional cut.

Although he welcomes the prospect of more options for gem cutters, de Witte believes there is only so much software can do. "A diamond is a moving picture, a 3D dynamic work of art. How you reduce that to
a formula of any kind is problematic," he says.

from 12/14/03 New Scientist online edition