

Place: **Union Hall**  
Meyers Street  
Next to Campus Life  
In Kettle Falls



Time: 7:00 PM  
Third Tuesday  
Each Month  
(Jan.-Nov.)

Newsletter December 2004

### Minutes for the November Meeting By Dianne Lentz

Our Christmas party will once again be at the American West Bank in Chewelah, December 21<sup>st</sup> at 5:30 PM. If you are into decorating, be there an hour earlier to help spruce up the place. You may bring a gift of ten dollars or less for the gift exchange. Bring your food and Christmas music too.

Rex brought up information about field trips for the next year. The Cleveland mine (with 15 types of mineral specimens) the Germania (with tungsten-wolframite-Ferberite), and the Daisy mine.

A motion was made by Larry to run ads in our newsletter to cover the cost of printing our new newsletter. Luci seconded the motion and everyone agreed to it.

Bev brought a video on Silversmithing. It showed all the tools and tricks of the trade. It also made a person realize how patient one must be to get a little bit of solder in place.

Elections for officers were held, and here is the new crew:

President: Johnie Pitman  
Vice President: Steve White  
Treasurer: Larry Price  
Secretary: Luci Bristow  
Trustee: Bob Bristow

Congrats!

Johnie reserved the Fort Colville Grange Hall for our annula show, which falls on Friday and Saturday, April 1<sup>st</sup> and 2<sup>nd</sup>, 2005. We will set up prior to that on Thursday, march 31<sup>st</sup>.

Our first show meeting will be an hour before our regular January meeting, the 18th. Get your polished rocks and grab bags ready.

Well, it is time to turn over the reins to your new secretary, Luci Bristow. Have fun Luci!

**(Thanks for all your work Dianne!)**

### Steve White – Tsaveorite Broker

*By Joseph Barreca*

The more you know about something, the more you know you don't know. That maxim certainly holds true for gems. I'm now sure that there is a tremendous amount to learn about these tiny treasures. That's why they are so valuable. It is



important to deal with someone you can trust who knows them well. Steve White, (our new Vice President and the first guinea pig in this series

focusing on a new rock hound each month), fits the bill. Steve got into tsaveorites while looking for a sapphire for his wife, Deb, in 1999. Now Steve works with jewels while Deb restores old cars.

So what the heck is a tsaveorite anyway? Named after Tsavo National Park in Kenya, where it was discovered in 1968, this is a one-source gem much rarer than emerald or diamond, but available at about a 1/4 of the price. Sizes below one carat make up 85% of the yield. Tsaveorites from one to two carats are available, larger sizes are extremely rare. Better specimens are intensely green others are lighter. Tsaveorites are 10 times rarer than emeralds and 25% of the price. Most of the new emerald finds are gree/blue, not green, green, green.

Steve has samples of many other gems including star sapphires and star garnets that are valued for the inclusions within them that reflect

light in a star pattern (six rays for the sapphires, four for the garnets). But most gems are valued on the four C's: color, clarity, carats and cut.

**Color** is the first thing you look for in a gemstone. pure primary colors are the most valuable. Garnets can come in many colors as can sapphires. Rubies are red sapphires.

**Clarity** is the next thing to look for. It is actually fairly apparent when a gem is very clear. But a jeweler needs at least a 10 loupe glass to determine the clarity because value drops off sharply when the jewel contains inclusions. There are grades from included to eye-clean (clear to the naked eye) through VSI (very-slightly-included).

**Carats** apply most directly to cut gems. Raw gems come in larger chunks. But typically they are cut to make the largest clear jewel. Size definitely matters and there are no discounts for bigger sizes. A 1 carat VSI tsavorite has a retail value of \$2000.

The **Cut** can add 50% to the value of a stone. A close look at Steve's stones shows no detectible irregularities in the cuts. He has them cut by professionals. Sapphires, with a hardness of 9, are



two on cutting equipment. Your biggest investment however is in yourself. It takes time and practice to become an expert on jewel identification and appraisal. You can take a test to become certified by the International Gem Society.

Gems are the quintessential good thing in a small package. When Steve, Deb and their children, Jennifer and Dale, moved from California in 1980, they left behind a large granite stepstool and a lot of other bulky keepsakes. But if they retire and travel the country rock hounding in an RV, they can take their entire stock of gems with them easily and still do business over the Internet. In the meantime, their collection increases in value while gold, stocks and bonds all fluctuate. Building a good reputation and reliable contacts takes time. When starting out, it is a good idea to have a third party, like escrow.com, hold the money while a purchaser examines the goods. Escrow.com takes a percentage of the sale, usually split between buyer and seller. So after you have established some worldwide connections, you can save a little by buying direct.

Don't run out and start buying gems without checking out the International Gem Society, [www.gemsociety.org](http://www.gemsociety.org). Their Gem Pricing Guide: Color and Light, (for members only), gives the current retail value of gemstones. You should also have some reference books:

- Color Encyclopedia of Gems, Joel E. Arem, PHD (\$110 retail)
- Handbook of Gem Identification, Richard T. Liddicoat Jr., \$47.50
- Gemstones of the World, Walter Schumann, \$24.95

And don't forget to check out Steve's web site: <http://www.sapphires-tsavorites.com>.



cut using diamonds with a hardness of 10. But diamonds are 1600 times harder than sapphires. (Diamonds can be cleaved along internal planes and the pieces come out perfectly smooth.)

With all this value at stake, it pays to have some good equipment for examining the gems. A polariscope and a refractometer work together to give you an exact number for the color(s). A good glass and light gives you a look at the clarity and cut. A digital carat scale is so sensitive that it needs to be recalibrated for atmospheric pressure after each use. Ironically a more expensive scale is needed for less expensive stones. You can spend another grand or

## Lava Caves by Bob Bristow

Compared to limestone caves, lava caves (or “lava tubes”) are uninteresting. However, you can still have plenty of adventures. I was working for the US Forest Service out of Bend, Oregon, and was stationed at China Hat Guard Station. My buddy Archie Mustard and I were the only ones at the guard station except for our foreman and his family. We decided that instead of going home every weekend, we would spend every other weekend in the camp area looking for lava caves. There were several caves in the vicinity, including two ice caves, where the Forest Service had provided roads and stairs for visitors. That wasn't for us. We wanted to find our own, preferably ones that no one had been in before. The country north of Paulina Peak had many depressions where caves had fallen in over the centuries since lava last flowed out of fissures. Some of these depressions were 50 yards wide and 200 yards long. The caves under them must have been spectacular. We were successful in finding and exploring at least a two dozen caves that summer. We would find two sinks that were reasonably parallel with each other and try to find a way to get into the cave in between.

In one of the first caves we explored, I crawled down under a protruding rock looking for a side passage. Lying on my back, I was looking up when Archie shined his light above the protrusion. I could see his light through a space behind the protrusion except for two small areas. I immediately realized that the protrusion was a house-sized detached part of the wall held up at only the two little places. It took me no time at all to get out from under it! Climbing up above that detached rock, I did find a side passage. It was only about two feet high and about 30 feet wide. Small stalactites covered the ceiling and the floor was covered by equally sharp stalagmites only inches apart. After that, I knew how it felt to crawl across a bed of nails! I finally reached a little room, about 10 by 10 feet wide by about 8 feet high. The floor was covered by soft sand that had trickled down through a hole in the ceiling. I thought I was the first to discover this cozy little den, but then I saw it! A cigarette butt in the corner. Someone had been there before me. I was disappointed but vowed that the

next person would feel much better. I buried the butt and carefully brushed out my tracks as I left. The next person would feel the thrill of being the first human in this room.

Archie and I climbed up to the top of a small hill to survey the countryside for signs of caves. Right on top we found a hole. A big hole about 100 feet



Figure 1. Lava Drippings from Burned-Out Log

across and about 25 feet deep. It had sides that curved in so that there was an overhang all around. There were bones in a corner where an

animal had fallen in and perished.

At one end, we

could see that you could get into the continuation of the cave. We went back and drove my car through the sagebrush up to the lip of the hole, tied a rope to my bumper, and I slid down. Archie hadn't scurried up and down ropes like I had and he had second thoughts about half way down. He hung there for a long time. Finally, he dropped on down after I convinced him that if he couldn't climb out on his own, I could simply start up the car and drag him up.

We made steady progress through the cave even



Figure 2. Lava Stalagmite from Lava

though there were numerous partial cave-ins. After about a quarter mile, we saw light ahead and soon found another complete cave-in that had a grass-covered slope from the surface right down to the bottom of the cave. We could have simply walked down if we had gone a little further on the surface! Things began to get

exciting. There were Indian writings all over one wall. (They are pictographs, but that was too big a word for us then.)

The far side of the cave-in had ashes. At least 10 feet of ashes! Indians must have lived here a long time. I found a pestle and looked for the mortar but could not find it. There were numerous deer skulls in the rocks. They had all been broken in two to reach the brains. Back in the cave on the other side, we found where the Indians had been exploring it themselves. There were numerous remains of sagebrush torches. Only the charred stubs remained. I tried to bring one out but the wood was completely rotted. It looked good, but when I tried to pick it up, it was all mush. At the back of the cave, I found and retrieved what appeared to be alum growing up out of a crack. The cave was blocked at this end by a lava waterfall (lavafall?) where the tube bent sharply down and was filled with lava.

Above the cave the ground was covered with obsidian chips; so many that they crackled when you walked over them. I went off without the pestle I found. The next year, I went back and it was still laying on the rock where I had left it. I forgot it a second time. Several years later I returned again. Someone had not only taken my pestle, but they had dug up all that ash and run it through a screen. The entryway was also dug up and screened. I don't know if it was an official excavation or if someone was looking for his or her own artifacts. Today, it would be illegal to dig up the ashes, take the pestle, or even pick up any of the millions of chips around the entry.

The above occurred out in the desert with only a few trees here and there. Archie and I found another kind of cave further up in the mountains. Here the lava had formed pressure ridges that normally break open along the top as the lava cools. In these, the lava had leaked out the bottom, leaving domed caves. One of these was especially intriguing. First, it had an entryway so that you could walk right in rather than having to crawl through. Second, it was perfectly clean with no fall-ins. Third, it had a seat all around the room. The seat was made of a thin sheet of basalt that had peeled off the wall and curved inward forming a perfect circle. The end result was a torus all around the room. This same curling of a thin sheet of lava was also in some of the lava tubes we visited.

I found many interesting rocks exploring lava

caves. There were many thin hollow tubes of lava that formed like stalactites. Figure 1 is a lava stalagmite while Figure 2 is a specimen of lava drippings. The lava drippings specimen was not found in one of the caves, but in a log that had been covered by lava and burned out. While burning, a shell had hardened around the log. Lava then flowed in and covered the bottom of the log cavity about a third of the way up. The lava shown had dripped from the top of the log cavity onto this floor, where I found it. The lava stalagmite came from the end of Wind Cave where I had opened an additional passage under a cave-in.

My friend Carl Hosevar had never found a "shed." (A "shed" is an antler shed by a deer.) I told him that I knew a place where he could find hundreds in a day. This he had to see, so I drove him from Seattle to Central Oregon SE of Bend and just north of Fort Rock. This place is called the Devil's Garden. It is several square miles of lava flows with pressure ridges about every hundred yards. Between the ridges, the ground is soft volcanic ash with sage and junipers. This is the edge of the desert and the mule deer come down out of the mountains to winter here. Each buck sheds his antlers each winter and the supply of "sheds" had become very large. However, people were just then beginning to collect sheds (they now have organized clubs), and people had collected all but the ones just shed and those beginning to rot. Carl still found dozens and took home all he wanted. Because the deer were here, so were the cougars. We found a set of tracks leading down into a pressure ridge cave to where ice melt provided summer water. Since I had never bagged a cougar, I took my trusty .30-30 down in the cave. It was just as well that the cat was not home. Even with the gun, in the confines of the cave, the cat had about as good a chance of bagging me as I had of bagging him!



Carl and I spent the next night in South Ice Cave. It was early summer and the ice formations

Figure 3. Camping in Entrance to South Ice Cave

were at their peak. A typical stalactite would be five or six inches in diameter and several feet long. Columns of shiny ice ran floor to ceiling. Much of the wall was covered by flowstone (flowice?). Unfortunately, I didn't have a camera that would take pictures in a cave.

Like to sample some of these exciting caves? In Bend, Oregon, get a map of the Deschutes National Forest. Look south and a little east of Bend. The map should show a number of caves open to the public. These include:

**Skeleton Cave:** one and a half miles long with some of the original flow material on the floor. (The author has spent several nights there.)

**Arnold Ice Cave:** This cave has nice steps down to the ice.

**Wind Cave:** Over one mile long with a hole in the roof that can cause a wind in the cave.

**South Ice Cave:** Great ice formations in early summer.

**Lava River Cave:** A large 1.5-mile tube now a state park. Visitors used to be able to rent lanterns. Now? (see below)

**Lava Cast Forest:** Not a cave, but a field of vertical tree casts. Very nice!

**Horse Cave:** A series of tubes just east of Bend.

\* My daughter April writes from the Cascade Science School near Bend (JB):

“I have been to a few of these caves, most well known is Lava River Cave which is now part of Newbery Volcanic National Monument run by the Forest Service. It is a really huge cave, goes under Hwy 97, and in the summer season you need a NW Forest Pass to go in and you can still rent lanterns there but if you bring your own they can't have glass covers.

I haven't been to Skeleton Cave, but it's really nearby to Boyd Cave and they are similar and mildly hard to find. Also the Lava Cast Forest is cool, but up a long dirt road that I wouldn't suggest driving a bus up unless you have more time than I did.”

SAGO Naturals & More



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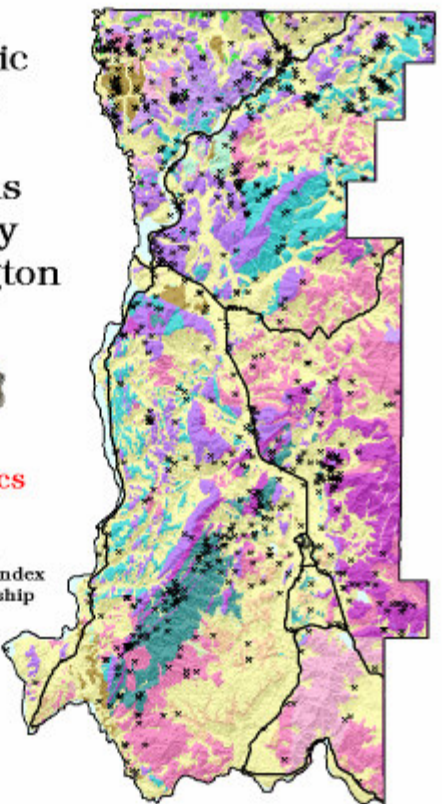
SAPPHIRES and TSAVORITES

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Geologic Atlas of Stevens County Washington



Map Metrics

960 Mines  
Base Rock Geology  
Metal and Mineral Index  
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As the sun sets over the Kettle Range snow slows rock picking to a crawl.

### The Newsletter Collection

As newsletter guy for the club, I have just inherited a box of newsletters from other clubs, that will end up in the club library. But first, I want to make a list of all these clubs. A few are on our mailing list already and no – I won't put them all on our list. But for those of us who are beginning to advertise or people wanting to check out clubs in areas they plan to visit, a list might be very helpful.

We are in good company. There are a lot of rock clubs out there and a lot of energy went into

### Membership Dues:

\$15.00 per household per year due to the club Treasurer on the third Tuesday of November for regular members.

We, **The Panorama Gem and Mineral Club**, are a multi-faceted group of mineral-minded people. Our proud members include some real gems, a few fossils, and even some diamonds in the rough. A few have lost some of their marbles, but they know where to get more! A few need to polish their coordination because they are always tumbling! And some are miners who use the "silver pick" as their tool of choice! It should be crystal clear, that we all enjoy this unique conglomeration and above all else we strive to **HAVE FUN**. And we never throw stones (away).

making all of these newsletters. Some newsletters of note are: The Hard Rock News (Kitsap), The Rock Rollers (Spokane), Grindings (Boise), Pebbles (Everett), Owyhee (Caldwell) and The Northwest Newsletter of the Northwest Federation of Mineral Societies. This last publication features articles by none other than our own Bob Bristow in almost every issue. Just having him as a member makes our club famous. On top of that, we have a pretty respectable newsletter of our own, when you get a chance to compare them all. Thanks Carol Price!

What we don't seem to have is a good collection of our own past newsletters. So if some of you out there are storing newsletters as well as rocks, I'd love to add them to the little binder I've started housing our previous issues.

### Panorama Gem and Mineral Club: Organizational Chart

<b>Officers:</b>			
President:	Johnie Pitman	640 Williams Lake Rd, Colville, 99114	684-8887
Vice-President:	Steve White	1337 Boise Rd, Kettle Falls, 99141	738-2195
Secretary:	Luci Bristow	PO Box 1165, Chewelah, 99109	935-4375
Treasurer:	Larry Price	PO Box 77, Laurier, 99146	684-2857
Trustee 1:	Bill Allen	2633 Highline Rd, Chewelah, 99109	935-8779
Trustee 2:	Bob Bockman	1750 N Havichur Loop, Post Falls, ID 83854	208-773-5384
Trustee 3:	Bob Bristow	PO Box 1165, Chewelah, 99109	935-4375
<b>Committee Chairs</b>			
Program Coordinator:	Bev Bockman	1750 N Havichur Loop, Post Falls, ID 83854	208-773-5384
Hospitality:	Mabel Barrans	PO Box 348, Chewelah, 99109	935-8461
Field Trips:	Dianne Lentz	556 Douglas Falls Rd., Colville, 99114	684-4925
	Rex Barrans	PO Box 348, Chewelah, 99109	935-8461
Librarian:	Ruth Ross	750 N Lincoln, # 6, Colville, WA 99114	
Public Relations:	Angela Ward	193 Duboise Rd, Colville, 99114	
Historian:	Carol Price	PO Box 77, Laurier, 99146	684-2857
Newsletter:	Joseph Barreca	2109 Hwy 25 South, Kettle Falls, 99141	738-6155
	Steve White	1337 Boise Rd, Kettle Falls, 99141	738-2195