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

THE PANORAMA GEM & MINERAL CLUB

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

The Panorama Prospector

November 2005

Panorama Gem and Mineral Club
Minutes for November 15, 2005

Johnie opened the meeting at 7:00 PM. Mable Barrans reminded everyone to sign up for their dish at the Christmas Dinner, Tuesday December 20th at the American West Bank, 106 S 2nd East, (South of the Post Office), 5:00 – Decorate, 6:00 – eat, optional gift exchange after dinner. Mable also reported that a computer crash had destroyed her mailing addresses for field trips. (They should be okay now.)

Johnie Pitman reported that payments for the upcoming Rock Show on April 1st, 2006 were already coming in. One half of the payment is due by January 15th to secure a spot in the show.

Elections were held for the upcoming year. The results were as follows:

Position	*Person*	*Vote*
President	Johnie Pitman	Unanimous
Vice-President	Steve White	Unanimous
Secretary	Luci Bristow	Unanimous
Treasurer	Sylvia Allen	Unanimous
Trustee	Joyce Dawson	Unanimous
Show Chair (2007)	Diane Lentz	Unanimous

Field Trips: Rex went back to Horseshoe Mountain off Trout Creek and came back with even more quartz crystals. They had to pretty much pull Diane Lentz out of the last vug hole with her fist full of crystals.

America the Beautiful Pass: Luci Bristow submitted her sample letter to senators and congressmen and Joe printed many copies with accompanying addresses. Newsletters and recreation guides were also available. We will be in contact with the American Federation of Mineralogical Societies watching this issue.

Annual dues were due in November and many of us paid them to our outgoing Treasurer, Larry Price.

Bill Allen auctioned off rocks donated by the club with proceeds going to the club scholarship fund. We raised $83.50.

The meeting adjourned at 8:45 PM.

Joseph Barreca, Secretary, pro-tem

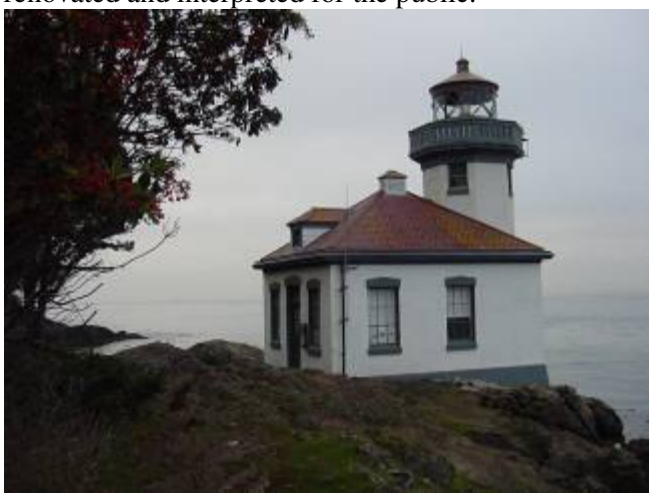
Lime Kiln Point
By Joseph Barreca

This field trip is a little further to the west than usual, in fact about as far straight west as you can go from here and still be in the United States. Lime Kiln Point Park sits on the western side of San Juan Island.

Restored Lime Kiln

In 1860, a lime producing operation began in what is now part of the park. For 60 years, the area adjacent to the park was quarried for limestone. Kilns were built to fire the limestone to produce lime. Buildings were built, roads were cut and much of the island was logged to feed the fires of the kilns. The U.S. Coast Guard operated the area adjacent to the lime operation as a lighthouse preserve. In 1919, the Lime Kiln lighthouse and two adjacent lighthouse keepers' quarters were built. When electricity was run to the site in 1960, the need to have lighthouse keepers on site diminished. In 1984, the Coast Guard turned the area over to Washington State Parks and the park

was created. The Coast Guard still maintains the lighthouse as an active aid to navigation, but the building is used for orca whale research, interpretation and lighthouse tours. One of the lime kilns was acquired by State Parks in 1996 and has been renovated and interpreted for the public.



Many limestone deposits contain fossils formed from ancient shell banks or coral reefs. Limestone, calcium carbonate, (CaO_3), when heated to 2000 degrees, breaks into lime CaO and CO_2. When water is added, it forms into carbonate crystals, which cling to other minerals. Mixed with fine clay, it becomes cement. Cities up and down the coast of Washington are built from Lime Kiln Point rock.

Shipping the lime in wooden barrels stacked in wooden ships was a dangerous enterprise. Lime that became wet during transit, caught fire and burned many a ship. The work was hard. It took two cords of wood to fire a kiln full of stone. Stones were pulled out and sorted while they were still hot.

Pieces that were too big to cook through or too small to sort were thrown to the side, where they eroded into the ocean.

But today the old quarry looks serene. A conservation group is developing it into its own park, alongside the existing state park. Grass, trees and wildlife have moved back into the abandoned quarry. Even the No Trespassing signs are fading away.

Finding Mineral Deposits in Granite

By Bob Bristow

I was walking (and crawling) through a thick stand of young firs above the south fork of the Snoqualmie River in Western Washington. It was a warm Saturday afternoon and I was happy to be away from the big city and my job. I love prospecting even if I don't find anything; so discovering a mineral deposit is frosting on the cake. The ground under the fir trees was covered with forest litter and a layer of moss. There was no ground showing, but I looked anyway. Then I saw a mound around a rodent hole. I climbed over a log and knelt down for a close look. In the dirt were a number of small pieces of white quartz. The quartz was angular and there was no sign of erosion. This meant that the quartz had weathered out of the rock nearby. I kicked away some of the moss and there was a small clear quartz crystal with a pointed end. (Quartz crystals are usually clean and shiny in forest litter. The acid in the fir needles cleans the brown stain that covers quartz crystals in the ground.) I now went to work to see if I could find the goodies.

Finding a deposit is a thrill that can be shared by anyone willing to spend the time carefully prospecting in wild granite country. Most rockhounds don't prospect only because they don't know how and assume that most mineral deposits have already been found. Actually, there are many more deposits waiting to be found than all those previously discovered. I have found many deposits and have found signs indicating the possibility of even more. In fact, there are so many signs that it is impossible to check out all of them. So how can you enjoy the thrill of discovery? This is the first of several articles on how to find and interpret those signs. We will start with granite-family rocks since they are common and contain some of nature's most exciting minerals.

The granite family includes granite, granodiorite, monzonite, and several less common rocks. Most people can recognize granite because it is both common and is used for many building and ornamental purposes. Most granite is composed of a mixture of dark and light colored grains. The dark grains are composed of several different minerals but are called "ferromagnesian" because they contain iron and magnesium. The light-colored grains may be white, pink, gray, and other light colors. These grains are composed of one or more varieties of feldspar. Also mixed in with the very dark and light grains are grains of quartz. The quartz sometimes looks gray because it is smoky. If it is not smoky, it still looks gray because a clear mineral embedded in other minerals traps the light inside and the clear mineral looks gray or even black. Granite often weathers into large, round boulders that can be delicately balanced on top of each other. Figure 1 shows a pile of weathered boulders on the pass east of San Diego, California. The Figure 1 granite is weathered but not mineralized. When mineralized, the whole rock slowly turns into sand and then into dirt. Here in NE Washington, there is an excellent exposure of weathered granite at Loon Lake on Highway 395. Driving south on the highway, you can watch it turn from unmineralized solid granite at Loon Lake into mineralized granite and finally into brown soil.

Figure 1. Weathered Granite Boulders

The experts advise passing up hard, unweathered granite like that shown in Figure 1 and prospecting in mineralized granite where there are no sharp outcrops. This is true for the large deposits, but the author has found unmineralized granite to be a good source of small veins and miarolitic cavities.

The mineral deposits in granite can usually be placed into the following:

- Veins – Sheet-like deposits in which the mineral has been either deposited by fluids or forced in from another area.
- Pegmatites – A course-grained granite that may be in the shape of veins or in pods. The mineralization comes from fluids that have been forced into the vein or pod from a nearby granite magma. Some pods can be several hundred feet in diameter.
- Disseminated – The mineral has been forced around the granite grains. The result is mineralization throughout the granite. Some of the world's largest copper deposits have formed this way.
- Pods, lodes, lenses – These are composed of large globs of the mineral surrounded by granite. They can form by several processes.
- Placer – The deposit has formed by water or wind concentrating minerals that have weathered out of the granite.
- Miarolitic cavities – Cavities in the granite, generally crystal-lined.
- Contact zones – These deposits

form around the periphery of the granite pluton and are due to the chemical reaction of the granite with the existing rock that is being intruded by the granite.

Each of the above types of deposits has its own characteristic signs that are too numerous to include in a single article. They will be discussed in future articles where they can be described in detail. In the meantime, there are some relatively easy places to prospect in granite country. Be sure to watch for these even if you are not prospecting, per se, but simply driving through granite country:

- Road cuts – The fresher the road cut the better. If you see a new road, drive up it to see if there are some new road cuts that haven't been prospected.
- Mud and rock slides – Slides sometimes uncover bedrock. In this case, climb up to see what is in the bedrock.
- Uprooted trees – Look in both the roots and the hole in the ground. Rain often cleans the rocks caught in the roots and makes them easier to identify.
- Erosion – Anywhere there has been erosion is a good place to look. Even small ditches can result in placer concentrations.
- Stream beds – Gravel bars can be deposits themselves, as can be the bedrock at the bottom of the stream. If the stream is small, you may be able to trace minerals upstream to their source.
- Old mines/prospects – There may be minerals that the miners did not want that are good collectables. Also, erosion around an old mine may have exposed new deposits.
- Ant hills/gopher mounds – Anthills are especially good because they often bring up samples from several feet down.

Back in the fir forest overlooking the Snoqualmie, I cleaned away the litter, and there it was! A small quartz vein with one to two inch quartz crystals. This was not a great discovery, but anytime I dig into a new deposit, I feel a rush of blood and suddenly know why life can be so good!

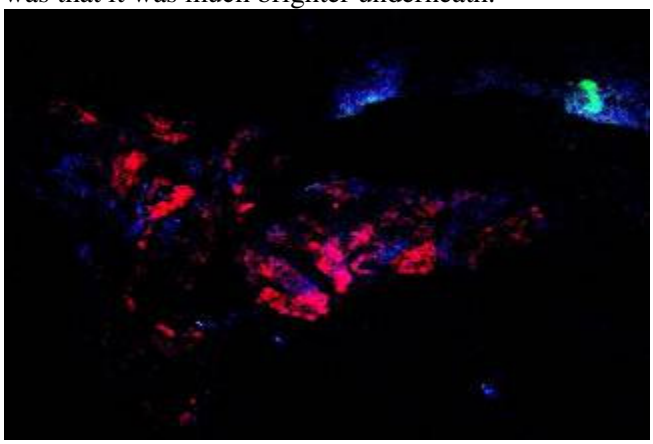
Back to the Young America
by Joseph Barreca

Some people just don't know when to quit. In that spirit, Bob Bristow and I visited the Young America mine one more time despite several inches of snow. This time I remembered to bring along the UV light and more importantly, I had a bona fide expert with me, who quickly proved his worth.

Bob knew of another entrance that didn't involve scrambling 200 feet up the tailings in the snow. It did involve climbing up old stopes and over pack rat nests. We found our first deposit of fluorescent red limestone along the way.

What I had really come to find were some fluorescent colors that had eluded me so far. One was a tiny smear of light blue on my chisel that I had not found on any of the rocks I collected. The other was a bigger sample of the bright green chips from my first trip. I also wanted to revisit a relatively small room at the center of the mine with a vein of calcite crystals along one wall. These rhomboid crystals are distinct in the large flat planes they create.

But I also suspected that the room had more fluorescent veins, and I wasn't disappointed. We found a distinctive red glow on one hanging wall. Wanting to make sure that the color permeated the rock and to see if it was even brighter on a clean surface, I took a chisel to the spot. A lot more rock came down than I expected. The bad news was that it whacked the UV light and my pack. The good news was that it was much brighter underneath.



It would have probably been even brighter if the jolt had not knocked loose two of the three bulbs in the UV lamp. (It's back together now with no harm done.) This pictures also shows shades of that elusive blue and more of the bright green. In fact we found large areas on some mine walls that fluoresced blue and green. Unfortunately, this turns out to be a surface phenomenon. The underlying rock does not fluoresce. So it's probably a growth or chemical reaction.

Another feature we took some time to check out was the amount of flow-stone that had accumulated as stalactites and stalagmites on some surfaces. No doubt, the large quantity of calcium in the rock accelerated this action. The most exaggerated examples were coming out of core-drill test holes. So much for growing a quarter inch every 100 years. These holes were probably less than 50 years old.

One of the disturbing things about exploring old mines is that they have been trashed over the years. There were beer cans (older pop tops) and this not-so ancient example of cave art in the mine also. Overall it was certainly worth exploring. The owners gave the club permission to explore it a couple of years ago. It would be nice to have more places to take younger and older people that are both safe and full of life's simple treasures.