Place: Arden
Community Club
Hall Rd
Arden, WA

Time 7:00 PM
Third Tuesday
April - September
6:00 PM October -
March & August

# The Panorama Prospector

January 2017

## Minutes
## December 20, 2016

In our brief meeting before the annual Christmas potluck, the club elected officers for the coming year:

President: Bruce Hurley
Vice President: Bob Bristow
Secretary: Anni Sebright
Treasurer: Johnie Pitman
Trustee Position 1: Sherryl Sinn

Then we proceeded to get on with eating dinner. After dinner we enjoyed a gift exchange with gifts marked for either male, female or both.

Dennis Gibbons picking a present

## Geology Snapshots - Hwy 395 from Arden to Deer Park

by Sharon Borgford

*All of us travel Hwy 395, so I thought I would do a few articles pointing out geological highlights along this portion of the route. These are only "snapshots" so I don't intend to talk about all the details that could be noted, just a few easily seen features.*


Northeastern Washington is one of the more complicated areas to figure out geologically, and geologists are still trying to piece together details of our history. Very briefly, we live on the edge of the "old" North American continent, believed to be a line that extends from the NE corner of our state in a southwest direction until the rock formations are covered by the Columbia River basalts. The ocean floor next to the old continent was large and existed for a long time. Plate tectonic activity is responsible for the changes in our bedrock as the plates began to push another land mass into this shoreline from the west. The ocean floor crumpled up into folds of sedimentary and metamorphic rocks as the plate dove under the old continent. This band

of ocean sourced rock is labeled the Kootenay Arc, and Arden is located in the midst of it.

The subduction of one tectonic plate under another results in volcanic activity on the overriding plate near the seam that connects the two, in this case, the "old" North American continent. We see a lot of evidence of this process in our area. Arden in located on an igneous rock formation known as the Starvation Flat/Arden pluton. A pluton is a mass of magma that cooled deep underground and then experienced weathering of overlying rock to the point where the rock is now exposed on the surface. Such plutons are typically the remains of magma chambers which once fed now-eroded volcanoes, built above them.

Just as different flows of lava on the surface can exhibit a variety of compositions, so do the magmas that cool beneath the surface. Most of us recognize these cooled magmas and call them by the general name of "granite". In reality, there are a range of sub-categories that exist within this group depending on their composition, even though they can look very similar to the naked eye. The Arden pluton is made up of an igneous rock named "monzogranite". This is a category of granite that has about equal amounts of the two feldspars Orthoclase and Plagioclase.


You have to look quickly as you travel in order to see the outcrops of these rocks that surround our meeting place in Arden because they only show around the edge of the valley. From Hwy 395, look for outcrops on the east side of the road as you get close to the large covered horse arena to the south. The Arden pluton forms a "bulls eye" in the midst of the larger Starvation Flat pluton (see map below).

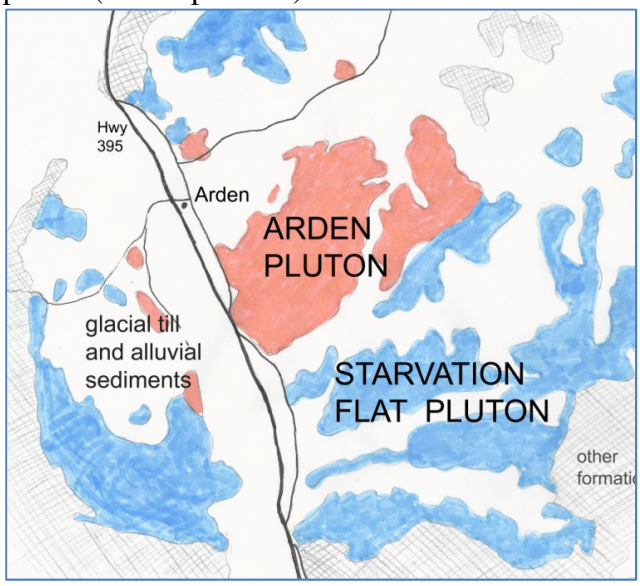


Plate tectonics continued to add land to our state from the west like a conveyor belt carrying boxes until it's landmass resembled what we see today.

The agent responsible for how the surface of our area looks today would be glaciers. The most recent continental ice sheet covered everything we can see from Arden. Locally, only the tops of Calispel Peak and Chewelah Peak were not covered. The glaciers did not form, stay the same, and then melt. They advanced and retreated multiple times, creating a lot of mysteries for geologists to try and figure out. Lakes would form along the sides of the valleys between the glaciers and the hills. For quite a bit of the last glaciation period, glaciers dammed the Columbia River not far from the present day Coulee Dam and created what is known as Glacial Lake Columbia. The maximum height of this lake is calculated to be 2400 ft, which means Arden was underwater at some point. This lake existed before the more famous Glacial Lake Missoula burst through its ice dam and sent flood waters throughout eastern Washington. It still existed after the last Missoula Flood, although at a shallower depth. (Lake shorelines are visible on the south faces of several hills as you travel Hwy 395 west of Colville towards Kettle Falls).

After the glaciers were gone from the lower elevations in the valleys, higher glaciers took longer to melt and so they continued to contribute run-off and sediment to the valleys. The sediments under

the Arden area are as much as 300 ft deep, per well drilling logs, measured to bedrock. Just west of Addy a well was drilled to 663 ft before reaching the bedrock.


We have reviewed part of the basic story about our area. In the next article we will begin our journey south from Arden and point out the results of these processes in a little more detail. If anyone has any comments, corrections, or questions about features you are curious about, let me know.

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Kahle, S.C., Longpre, C.L., Smith, R.R., Sumioka, S.S>, Watkins, A.M., Kresch, D.L., 2003, Water Resources of the Ground-Water System in the Unconsolidated Deposits of the Colville River Watershed, Stevens County, Washington; USGS Water-Resources Investigations Report 03-4128.

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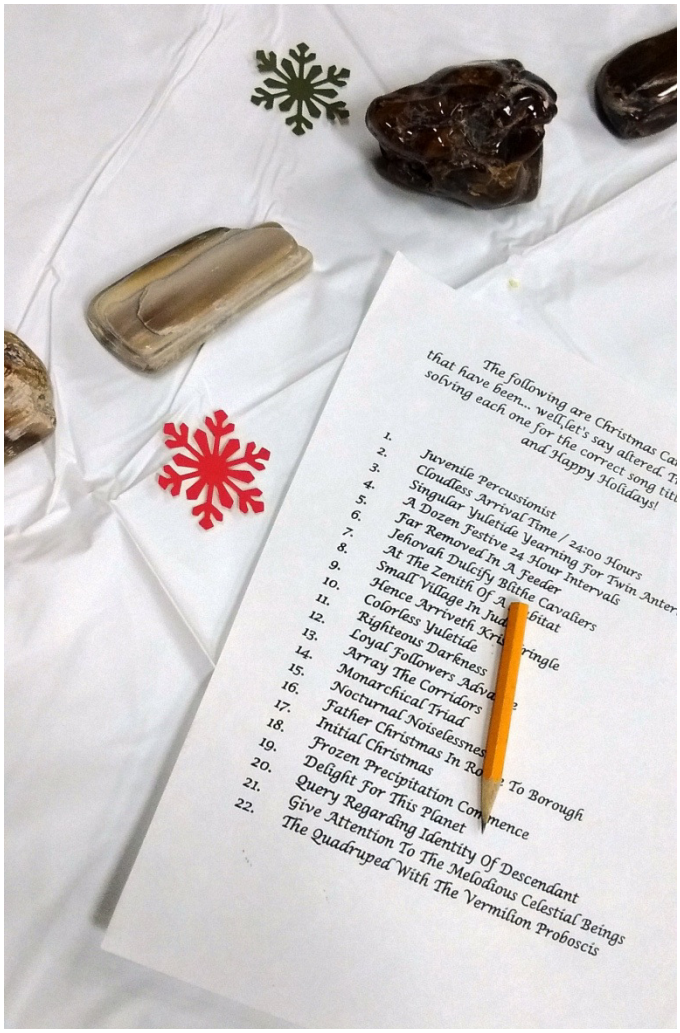
All photographs and illustrations by Sharon Borgford unless otherwise noted.
12/20/2016

## A Welcome Icebreaker




As if Sharon Borgford had not added enough to this newsletter with the previous article and the pictures in the minutes column, this is a picture by Sharon of one of the Christmas-themed puzzles she brought copies of to the Christmas meeting. This one is a list of Christmas carols that have been renamed. The challenge is to figure out the original name. For instance the first one, "Juvenile Percussionist" would be "Little Drummer Boy".

Additionally she brought a page of cartoons that depicted the names of carols. The one that stumped us for awhile looked like a listing of all the letters of the alphabet. On closer inspection, it was missing the "L". So Noel.

These were actually a lot of fun and something we could puzzle over with members we barely knew. They added a lot to the party.

# Larimar

*by Joseph Barreca*

Last month the club got an invitation to buy pieces of Larimar from a group in Sequim, Washington. It piqued my interest in Larimar, which I had never heard of and in this youth group who was purportedly selling raw Larimar at a $500 per pound so they could fund building houses for poor people in the Dominican Republic, which is the only place that mines Larimar.

Details about the youth group were sketchy and our resident online rock salesperson, Sherry Bamberger, advised me that we should only deal with well-known vendors if dealing remotely or go to Sequim and work something out in person. Sherry does have solid connections for this kind of stone.

Aside from that, it is a spectacular gemstone. The color echoes the hue of the Caribbean Sea. Wikipedia has this to say about it: Larimar or blue pectolite is an extremely rare gemstone. It has been found only in one location: a mountainous, relatively inaccessible area in the province of Barahona in the **Dominican Republic**.

**Larimar** is the native stone of the Dominican Republic. It is a **pectolite** and found only in the DR. There is some copying of **larimar** being done, but most of what is sold is authentic. The most common **larimar** is a light blue with white marbling throughout.

**Pectolite** is a unique mineral known for its interesting crystal habits. Its crystals primarily form as extremely slender and elongated densely grouped fragile fibers radiating from a central point outwards. When the fibers are very densely-packed, the result formation is as thick, globular masses.

# Nickel clue to 'dinosaur killer' asteroid

*By Jonathan Amos BBC Science Correspondent, San Francisco*

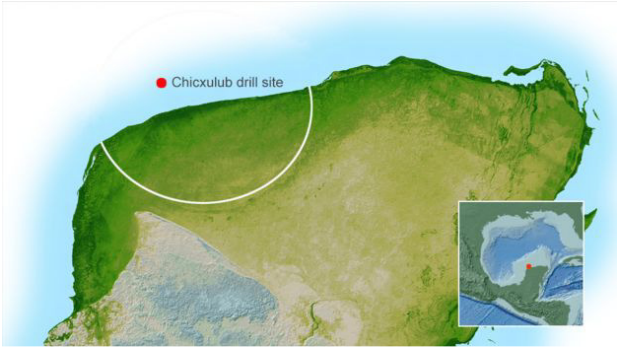
Scientists say they have a clue that may enable them to find traces of the asteroid that wiped out the dinosaurs in the very crater it made on impact.

This pointer takes the form of a nickel signature in the rocks of the crater that is now buried under ocean sediments in the Gulf of Mexico.

An international team has just drilled into the 200km-wide depression. It hopes the investigation can help explain why the event 66 million years ago was so catastrophic. Seventy-five percent of all life, not just the dinosaurs, went extinct.

The UK-US led team gave an update on its research here at the Fall Meeting of the American Geophysical Union in San Francisco.
The group is currently running all manner of lab tests on the hundreds of meters of core pulled up from under the Gulf in April and May.

One tantalizing revelation is that the scientists observe a big nickel spike in the sediments immediately above what has become known as Chicxulub Crater. This is an important marker that could lead on to the discovery of asteroid material itself.



## Localities That Used To Be

*by Bruce Hurley*

Looking outside it appears that it will be a long time before anything other than some version of ice will be collectable in the Inland Northwest. This realization sent me to work on boxes labeled California and Nevada, containing minerals collected decades ago. Examining the contents of these boxes soon led to a second realization that many of these specimens came from localities which may no longer be accessible, or even exist, in the 21st Century. So, here is a look at what was there, way back when.

**Artinite - Clear Creek, San Benito County, California**

Artinite is formed by the alteration of serpentine, but looks nothing like its soft green parent mineral. Instead, this hydrated magnesium carbonate forms small spherical white masses of radiating needle-like crystals.

**Native Mercury – Little Kings Mine, Kings County, California**

The Little Kings Mine produced mercury from cinnabar (mercury sulfide) early in the 20th Century. After decades of rock lying on the mine dump, a lucky hammer hit to a chunk of high-grade ore would yield small drops of native mercury in vugs within the rock, weathered from the original cinnabar.

**Aquamarine Beryl – Virgin Mountains, Clark County, Nevada**

In the post-World War II rush to build nuclear weapons, pegmatite rocks just about everywhere were scoured for the beryllium silicate mineral beryl, for the beryllium metal used in those weapons. These mountains did not contain all that much beryl, but what was present was often of the pale blue variety known as aquamarine.

(These are only 3 of 8 lost localities that Bruce has written about. More will be included in next month's newsletter. By the way, most of this month's newsletter has been submitted by members for which I am very thankful. If you have anything you might want to contribute, please email me at Joe.Barreca@gmail.com.)

**Membership Dues**:
$20.00 per **household** per year is due to the club Treasurer Johnie Pitman (address below) on the third Tuesday of November for regular members.
Webpage: http://panoramagem.com/
Contact: Bruce Hurley, President, 509-413-2768.

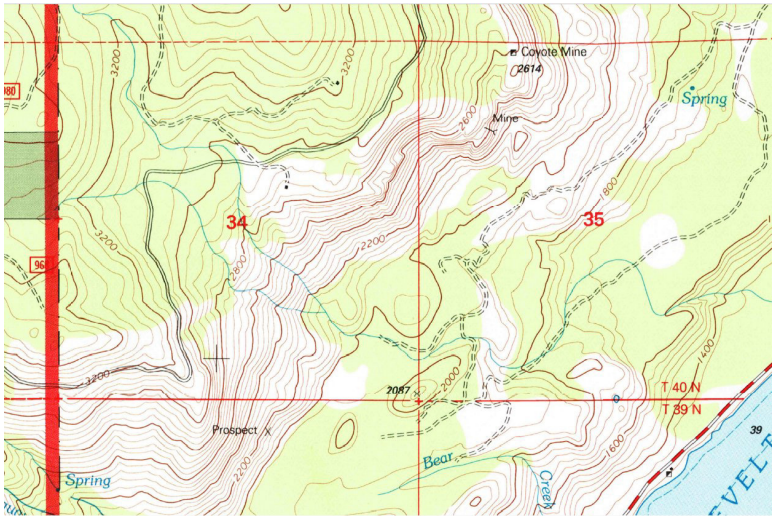
We**, The Panorama Gem and Mineral Club**, are a multi-faceted group of mineral-minded people. Our proud members include some real gems, a few fossils, and even some diamonds in the rough. A few have lost some of their marbles, but they know where to get more! A few need to polish their coordination 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).

## Using GPS

The monthly club meetings at the Arden Community Center will begin at 6 PM. Joe Barreca will talk about using GPS on your cell phone or tablet to find mines and trails.

We re-up our membership dues in November to keep in sync with the Northwest Federation of Mineralogical Societies newsletter subscriptions. If you have not paid dues for 2017, you may stop getting this newsletter.

To the right is a screen shot of a topological map that will be used in the GPS demonstration at the next club meeting. Since some of you will not be able to attend (snow is expected), I am including a link here to a website with these specially geo-referenced maps: https://ngmdb.usgs.gov/maps/TopoView/ click on the "Get Maps" menu to get maps. The best way to use these maps on a cell phone is with the Avenza Map application, a free download from http://www.avenza.com/pdf-maps. There are also hundreds of free trail maps available from http://newashingtontrails.com/ that are also geo-referenced and can be used away from cell tower coverage on most cell phones.




**Panorama Gem and Mineral Club: Organizational Chart**

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|---|---|---|---|
| **Officers:** | | | |
| President: | Bruce Hurley | 10617 W. Lakeside Lane, Nine Mile Falls, WA 99026 | 509-413-2768 |
| Vice-President: | Bob Bristow | PO Box 1165; 2567 Mud Lake Rd. Chewelah WA 99109 | 509-935-4375 |
| Secretary: | Anni Sebright | POB 293, Clayton, WA 99110 | 509-276-2693 |
| Treasurer: | Johnie Pitman | 701 B Williams Lake Rd, Colville, WA 99114 | 509-684-8887 |
| Trustee 2: | Gene Fisher | 295 Gold Creek Loop Rd, Colville, WA 99114 | 509-684-8546 |
| Trustee 3: | Bill Allen | 2633 Highline Rd, Chewelah, WA 99109 | 935-8779, 936-2446 |
| Trustee 1: | Sherryl Sinn | 725 S. Chester, Colville, WA 99114 | |
| **Committee Chairs** | | | |
| Program Coordinator: | Bev Bockman | 1750 N Havichur Loop, Post Falls, ID 83854 | 208-773-5384 |
| Hospitality: | Debora Danielson | 1365 Arthur Ct, Kettle Falls, WA 99141 | 509-960-1535 |
| Club Shop: | Gene Fisher | 295 Gold Creek Loop Rd, Colville, WA 99114 | 509-684-8546 |
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| Historian: | Carol Price | PO Box 77, Laurier, WA 99146 | 509-684-2857 |
| Newsletter: | Joseph Barreca | 2109 Hwy 25 South, Kettle Falls, WA 99141 | 509-738-6155 |
| Show Chair | Bill Allen | 2633 Highline Rd, Chewelah, WA 99109 | 935-8779, 936-2446 |
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