BUGLE

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RIPPLE ROCK GEM & MINERAL CLUB
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Regular monthly meeting
2nd Friday each month at 7:30 pm
(Except June, July & August)
Craft Room, Campbell River Community Hall
401-11th Ave
Campbell River, BC

RIPPLE ROCK GEM & MINERAL CLUB

RIPPLE ROCK EXECUTIVE 2016

President	Kathy Young	250-285-3343
Vice-President	Linda Henderson	250-286-1718
Past President	Gordon Burkholder	250-923-1740
Secretary	Steve Cooley	250-287-4388
Treasurer	Dennis Cambrey	250-337-8949
Wagonmaster	Shane Mawhinney	250-285-3465
Assistant Wagonmaster(s)	Ken Palmblad	
Show Chair	Pat Doyle	
Shop Coordinator	Beba Adams	250-926-0044
Shop Maintenance		
Entertainment		250-285-2377
Publicity	Diane Cooper	250-830-0889
Bugle Editor & Distribution	Gordon Burkholder	250-923-1740
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Showcase	Beba Adams	250-926-0044
Slab Draw/Collection	Beba Adams	250-926-0044
Coffee Break	Jack and Jan Boyes	
Basic Lapidary Instructor	Steve Cooley	250-287-4388

Delegates to Vancouver Island Zone Meetings

Senior	Gordon Burkholder
Intermediate	Jan Boyes
Junior	Ulla Williams

WORKSHOP

Shop located at 246 Dahl Rd.
For general shop info contact
Beba Adams 250-926-0044
The workshop hours are posted on the club website.
www.ripplerockgemandmineralclub.com

MEMBERSHIPS
A single membership is $15.00 and a family is $25.00. Memberships may be paid at the General meetings or by mail to Box 6 Campbell River, BC, V9W 4Z9.

President's Prognostications

The main issue for the exec, (and the Club as a whole) is the show and I can't find Pat. Dennis has the tables set up and the elevated table for us to show rock specimens from our club, Linda has a strong handle on the kids section, Shane is doing something with the soapstone carving at that center. He hasn't been able to come to most exec. meetings so I am not sure what trips are planned beyond the big ones already announced. Wayne and Dagmar are preparing the gem tree center and are looking for small slabs to attach the trees to. Steve has figured out where show posters need to be. A message is out to club members to start polishing stones for the grab bag sales. **Message from the president of your rock club**, please make yourself available for a whole weekend of set up Fri June 10, 11, 12, takedown. Everyone will have hours they can donate, it's your club and we do not have to do other fundraising to provide meeting facilities, sponsoring speakers and supporting field trips. School requests for education are always free of charge; we need to keep it this way. Please set this weekend aside for working the Show.

Kathy Young

Membership Moments

We have some new families joining our club of late and one returning member. Welcome back Mike Boas!

Our newest members are Ron and Deena Bowerman and their children Kolby, Owen and Jakob. Also joining us are Ed and Linda Gavigan and their grandchildren Shaye and Caleb.

Welcome everyone!

Dennis Cambrey

Vice President's View

For the next general meeting, I will be bringing in a nice supply of Jade, Some Rhodonite, some Red Jasper, and some flower stone to sell to club members. These stones came from a Rockhound on Saltspring Is. If anyone is interested in purchasing some good slabs bring your bucks.

One more thing is if anyone who ordered the Rockhounder or a Directory from me has not yet paid please bring in your money and pay directly to me. I am still out of pocket and would like to collect.

Linda Henderson

Zone Report

Meeting was held at the Victoria Lawn Bowling Club house with representatives from each of the member clubs present The Victoria Club hosted this meeting and provided a lovely refreshment/snackie table for us and the BCLS group. I had to leave right after our meeting and Cameron Speedy kindly took over as host for the remainder of the meetings.

Some things to ponder . Cameron made these suggestions several years ago and mentioned them this Sunday - they are proactive and certainly within the realm of "Zone". Workshops - e.g. for show chairpersons, shop coordinators, attracting new and younger membership, and so on. Whatever areas the membership desire to discuss and share, and hopefully learn from. The next meeting will be held at the Gemboree, on Sunday at 10 am.
Jan will be including the particulars in the minutes.
I am now going back to treasurer - we've had a very successful and meaningful two years.
Dave West was very pleased to announce that Port Alberni now working toward their own workshop - as is Courtenay. All Island clubs will then have workshops and might be interested in sharing the $$ aspects of operating them and what the charges could/should be - workshop.

Ulla Williams, Treasurer and Junior Zone Delegate

Web Site Data from the Web Master

In this modern age where social media venues are so prolific, it is good to know why a web page (www.ripplerockgemandmineralclub.com) is still a very useful way to maintain an online presence. Here are a few comparisons with other popular media venues. Facebook is a continuing interactive saga and is not as easy to navigate or find information or comments from the past as a web page. Twitter is, in my opinion, just a shorter version of that (Facebook) with users providing general comments on specific topics that change like a kitten's attention span. Each one of these venues has its purpose and intended audience and therefore its usefulness.

But here's why I think the web page is more suited to our needs. It retains information in organized sections (pages) and it makes information, videos, newsletters, etc., easily retrievable. A lot of the information is static but, for new viewers, important to have. Things like the Rockhounders' Ethics, our club's Constitution, executive roles, etc. are static but vital at certain times during the year. Web pages also allow the viewer to look at only the information they want without having to scan the entire site. I hope you visit the webpage regularly.

Janet Burkholder

Editor's Message

It's getting close to my birthday (March 21) and we are slowly heading back up to the Island. But right now we're high up on the plateau (elev. 6700 ft.) south of the Grand Canyon. Days are warm but the nights have all been well below freezing however the sun has not stopped shining. We've made our sojourn to the "rim", driven the downtown portion of old Rte. 66 in Williams and even made a stop at a very cool rock and more shop near the junction of AZ 180 and AZ 64. This place is amazing! The pieces they have on display and up for sale are beyond the norm (and so are their prices!). And so now it's time for the April Bugle to appear. I hope this is an issue not unlike the flowers of spring; brilliant, beautiful, and welcomed! Enjoy.

Gordon Burkholder

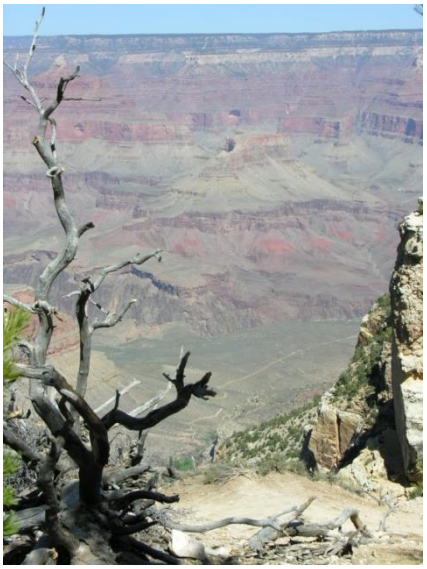
Quotable quote: The world is a dangerous place, not because of those who do evil, but because of those who look on and do nothing. *Albert Einstein*

GRAND CANYON: SOUTH RIM

By Gordon Burkholder

I can't tell you how many pictures I've seen of the Grand Canyon because the number is just too large. But standing on the edge of the canyon and looking up and down its scope is very difficult to describe as well. The thing is just massive! Looking down the 5000 feet to the river below gives it a bit of perspective especially when you are told the Colorado River averages nearly 300 feet wide for its 277 river miles (446 km). At the bottom you can see the climate change as the greenery and lushness is visible even at this distance.

The colours found in the layers of rock from the top to bottom ranges from off-white to yellows, oranges and reds and even has layers of greenish rock for contrast. In all there are 12 geologic cross sections in the canyon. The youngest and uppermost is the Kaibab formation and dates to 270 million years. The lowest and oldest is the Vishnu Basement rocks and is dated at 1.840 billion years in age.



View of the Grand Canyon from the South Rim

Photo by author

It was an amazingly interesting walk along the rim trail and what made it for me was the inclusion of rocks, many of which were beautifully polished and arranged and labelled according to age.

These are a few of the examples from along the trail.

Grand Canyon Geology: Us Department of the Interior pamphlet

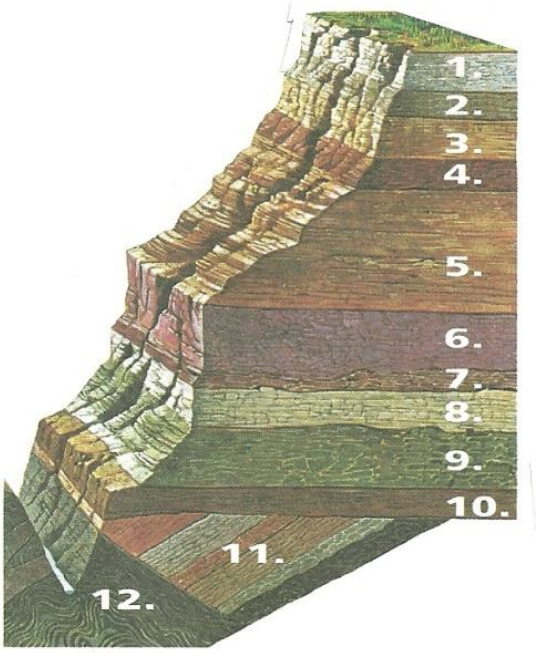
“Nowhereon this planet are the scope of geologic time and power of geologic processes as superbly and beautifully exposed as in these canyon walls. Rock equivalent to many of these strata may be found scattered throughout the United States, and flowing water has sculptured other landscapes. Yet, at Grand Canyon, a remarkable geologic assemblage is exposed in sequence and intact as an amazing erosional landscape.

The canyon wall reaches 5000 feet below the rim to the river. The thickness of all Grand Canyon rocks, if present in one spot would total more than 15,000 feet. Some rock units, howwever, appear only in some parts of the canyon. The strata of Grand Canyon do not present a continuous record of Earth’s history. Some rock layers eroded away before newer layers weree depositied on top producing unconformities, millions of years of missing time and unknown geologic stories.

Each rock layer represents a period when a particular environment of deposition prevailed. For example, the Kaibab Formation, the rock that makes the canyon rims, is the youngest of Grand Canyon layers. The Kaibab Formation formed in shallow, warm seas about 270 million years ago, a bit before dinosaurs roamed the earth. Below the Kaibab Formation caprock, the strata become progressively older.

The older rocks lie more than 3000 feet beneath the rim in the walls of the Inner Gorge. The Vishnu basement rocks consist of ancient igneous and metamorphic rocks that formed deep within the Earth when island arcs collided with the continental mass. These crystalline rocks - shcist, gneiss, and granite - are very different in origin and structure than the sedimentary rocks above them. The Vishnu basement rocks, including Vishnu Schist, are between 1.84 and 1.68

billion years old. Grand Canyon's oldest rock, the Elves Chasm Gneiss, is not visible in this part of the canyon."



Geologic Cross Section of Grand Canyon

1. Kaibab Formation..... 270 my
2. Toroweap Formation..... 273 my
3. Coconino Sandstone..... 275 my
4. Hermit Formation..... 280 my
5. Supai Group..... 315–285 my
6. Redwall Limestone..... 340 my
7. Temple Butte Formation..... 385 my
8. Muav Limestone..... 505 my
9. Bright Angel Shale..... 515 my
10. Tapeats Sandstone..... 525 my
11. Grand Canyon Supergroup.. 1,250–650 my
12. Vishnu basement rocks.... 1,840–1,680 my

Jokingly: Heated Argument

During a heated discussion Opal screamed at Amber, telling her that not only was she not a jewel but she wasn't even a mineral.

"Is that so," Amber snorted, stating flatly that Opal had no cleavage.

"Perhaps so," replied Opal, "but at least I'm not just organic ooze with bugs - I'm pristine, white, and smooth."

"That's tuff," said Amber, secreting with rage.

source: http://jokes4us.com/miscellaneousjokes/schooljokes/geologyjokes.html

Sun Stones and Moon stones

Sunstone color relates to the amount of copper in the stone – 20 parts per million for yellow, 200 parts per million for red.

Oregon Sunstones

reprinted from a February, 1987 *Oregon Geology* article by Ron Geitgey

Oregon sunstone, also known as heliolite, is a transparent feldspar with colors ranging from water clear through pale yellow, soft pink, and blood red to (extremely rare) deep blue and green. The color appears to vary systematically with small amounts of copper and may depend on both the amount and the size of individual copper particles present in the stone.

Pale yellow stones have a copper content as low as 20 parts per million (ppm) (0.002 percent), green stones contain about 100 ppm per million (0.01 percent), and red stones have up to 200 ppm (0.02 percent) copper. Some of the deeper colored stones have bands of varying color, and a few stones are dichroic, that is, they show two different colors when viewed from different directions.

Many stones appear to be perfectly transparent at first, but when they are viewed in just the right direction, a pink to red metallic shimmer flashes from within the stone. This effect is called "schiller" or "aventurescence" and is caused by light reflecting from minute parallel metallic platelets suspended in the sunstone. When viewed along their edges, the platelets are invisible to the naked eye; when viewed, however, perpendicular to their surfaces, they reflect light simultaneously from each platelet, creating a mirror effect. Earlier studies of the Lake County feldspar suggested that the platelets were hematite (iron oxide), but the most recent research concludes that they are flat crystals of copper metal.

The terms "sunstone" and "heliolite" (from Greek helios, meaning sun, and lithos, meaning "stone") have been used for at least two centuries for feldspars exhibiting schiller. The Lake

County occurrence was first reported in 1908, and the presence of the schiller effect was the original reason for naming the stones sunstones. For decades, however, the term "sunstone" has been used for these Oregon gem feldspars both with and without schiller.
Oregon sunstones are a calcium-rich variety of plagioclase feldspar named labradorite, a common mineral in basaltic lava flows. All three known sunstone occurrences are in small basalt flows that superficially resemble basalt flows elsewhere in the state that contain large feldspar phenocrysts or megacrysts. However, feldspars in those flows are typically cloudy to opaque and relatively small compared to those in the sunstone flows, which are clear, glassy, and can be up to 2 or 3 in. in one dimension.

-No detailed information has been collected on the geology, petrography, or chemistry of the known sunstone flows, so no meaningful comparisons can be made between them or with other flows in the area. The sunstone flows appear to be small; the Lake County occurrence covers about 7 sq. mi., and the two Hamey County occurrences are probably less than 1 sq. mi. each. Considering the regional geology and the wide separation between the flows, it is probable that there are more sunstone occurrences in the area.

Sunstones are mined from the soil and partially decomposed rock formed by weathering of the lava flows. The surface debris is dug with pick and shovel and sieved through a quarter-inch screen, and the sunstones are separated from rock fragments by hand. In some local areas, the lava flows are weathered to a depth of several feet, and good stones have been recovered from pits dug into these zones. Hard-rock mining techniques have been used on unweathered parts of the flows, but the sunstones are often shattered along with the lava, and recovery of large unbroken stones is difficult.

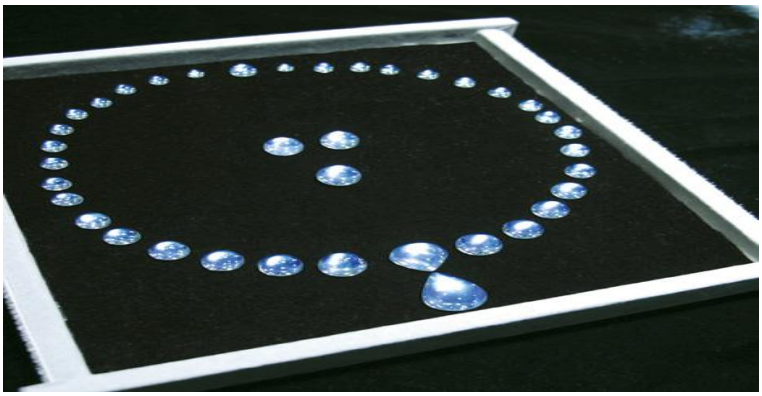
Except for part of the Lake County occurrence, all three producing areas are held by mining claims and are not available for collecting without permission of the claim owners. About 2 sq. mi. of the Lake County flow have been withdrawn from mineral entry and established by the U.S. Bureau of Land Management (BLM) as a free public collecting area. This sunstone area is located off the northeast flank of the Rabbit Hills about 25 mi. north of Plush and 80 mi. northeast of Lakeview. Maps, directions, and information on road conditions are available from the BLM District Office in Lakeview.

Varieties of feldspars used as gemstones are valued for their colors or optical effects. Being typically translucent to opaque, they are normally cut in rounded forms or cabochons. Transparent gem feldspars, particularly calcium-rich varieties, that can be cut as faceted stones are rarer. Occurrences of transparent labradorite have been reported from Arizona, California, New Mexico, and Utah, but few gems have been produced from those areas. Oregon sunstones are uncommon in their composition, clarity, and range of colors, and they occur in sufficient abundance to permit sustained production of faceted gems.

Editor's note: Because of the age of this article the specific information about collecting sites may have changed. It is important to check with local authorities before you collect rocks. GB

Quote: Rocks have been shaken from their solid base, but what will move a firm and dauntless mind? *Joanna Baillie*

Moonstones



Blue sheen against a colorless background is a prized moonstones combination. This suite of finely crafted moonstones is arranged for a designer ensemble.
- Courtesy Temple Trading Company

Moonstone's delicate beauty and its long-established heritage make it perhaps the most familiar gem-quality member of the feldspar group.
Feldspars are the most widespread minerals in the earth's crust, as well as some of the most diverse. You can pick up a rock anywhere in the world, and you'll probably find that it contains a mineral or two from the feldspar group.

Moonstone is a variety of the feldspar-group mineral orthoclase. It's composed of two feldspar minerals, orthoclase and albite. At first, the two minerals are intermingled. Then, as the newly formed mineral cools, the intergrown orthoclase and albite separate into stacked, alternating layers.

A variety of labradorite is sometimes called rainbow moonstone

When light falls between these thin, flat layers, it scatters in many directions, producing the phenomenon called adularescence. Adularescence is the light that appears to billow across a gemstone, giving its surface a glowing appearance.

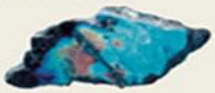
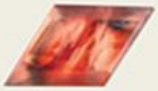
Perhaps the most captivating aspect of adularescence is its appearance of motion. The misty light seems to roll across the gem's surface as you change the viewing angle.

Other feldspar minerals can also show adularescence. One is a labradorite feldspar found mainly in Labrador, Canada. Another labradorite—found in Madagascar—has a multicolored adularescence over a light body color. It's known in the trade as rainbow moonstone, despite the fact that it's actually a variety of labradorite rather than orthoclase.

Sanidine is another feldspar mineral that can include adularescent gems called moonstones. To be called moonstone, a mineral's actual identity is not as important as the beauty of its adularescence.

The table below describes gems in the feldspar group.

Gems of the Feldspar Group

SPECIES	VARIETIES
ORTHOCLASE	 Moonstone  Transparent yellow
LABRADORITE	 Labradorite  Rainbow moonstone  Sunstone  Transparent yellow
OLIGOCLASE	 Sunstone
MICROCLINE	 Amazonite

Final Thought: I do not know with what weapons World War 3 will be fought, but World War 4 will be fought with sticks and stones. *Albert Einstein*