



BUGLE



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



RIPPLE ROCK GEM & MINERAL CLUB

RIPPLE ROCK EXECUTIVE 2015

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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.

Rock Display helps introduce our club to the Community

On Saturday Feb 21 at the Maritime Heritage Center Melissa Ticknor and Jamie Myhre made a display entitled, "A Day at the Beach". They had collected lots of specimens from local beaches. They used the field guide for pebbles to help identify some of them. Barb Akelaitis and Linda Henderson both spent some time at the booth talking to visitors. This was a good way to introduce our rock and gem show in June. A great display! Our thanks to Melissa and Jamie



Jamie stands beside the RR Display while Barb Akelaitis, Melissa Ticknor and Harry Kerr look on.
Submitted by Molly Milroy

Geologist, David Caulfield to speak at March meeting.

A reminder to members that the Geologist, David Caulfield will be giving a talk and answering questions with attendees. Meetings start at 7:30 and this one will have an abbreviated business portion to allow maximum time with David.

Editor's Message

Thanks to all the members who have taken a moment out of their lives to encourage me with positive comments. I do appreciate them! Janet has been working hard alongside me each month making sure the "Bugle" is laid out in an interesting and easily read manner and that the pages conform and aren't wasteful. I think she has done a wonderful job! And don't forget that the Bugle is online at our website if you need to refer to any of this year's issues.

This month we continue to explore rock identification, set out some information on the March birthstones and provide a few tidbits for lapidary projects. As well I am introducing faceting as an additional activity for lapidarians. I hope everyone is visiting the club's website www.ripplerockgemandmineralclub.com to see the features that are there. Each month there is more information added to the site and we are trying to work in a complementary and somewhat coordinated manner in our publications to provide you with as much information with as little repetition as possible. Visit the site to see what's there already.

Gordon Burkholder

Quotable quote: Self-education is the only kind of education there is.

- Isaac Asimov

FROM THE CLASSROOM

North Island College offers several courses that would be of interest to our club members. Here is one that is being taught by Tracey Gibbons who was a long-time member of our club. Tracey will also have a table display at the Show in June for the College.

GENI-1250

INTRODUCTION TO GEMMOLOGY

[Online Registration Available](#)

Are you interested in learning about gemstones, what sets value in a gem, and how you can identify them? Join certified gemologist and jeweler Tracey Gibbons for a course on gem theory and practical gemological testing methods. This four-week course will cover gem characteristics and how to identify gems in today's marketplace. You will also explore genuine vs. imitation gems, learn to use basic gem testing equipment, and look at diamonds and their imitators.

Mar 9-Mar 18 \$115.00

Intro to Faceting

Many lapidarians come to the point where they are looking for another creative venue to work rocks in. They usually end up by exploring the art of faceting. Many of our own club members are gifted faceters and so I would like to explore this side of our hobby. To do this I went on-line and found a wonderful site. I shared this with Gordon Billings who is not only a long-time member of our club, past president, show chair, cabochon judge, etc. but also a faceter of some note. As a teaching tool, Gordon tells me this site is good, so I will put in some pieces from it and provide you, the reader, with the website address in case you'd like to delve deeper.

G. Burkholder

<http://www.gemsociety.org/article/fundamentals-of-lapidary-part-5-faceting/>

Faceting is a marvelous amalgamation of engineering and art. Through a mechanical process of cutting facets on a piece of crystal, marvelous gems are created.

To the uninitiated, faceting appears to be the apex of complexity, but that is not the case. Faceting has its complex areas, like competition cutting and design, but one does not need to enter these areas. Learning the standard cuts is within the reach of almost everybody. The primary requirements are a desire to learn and the ability to follow instructions.

To unravel the mysteries of faceting, we will describe the actual cutting process. The material is not important; the procedures are the same for amethyst, emerald, or any other gem material. There are several steps, but none of them are particularly complicated. Once you see how simple it is, you will understand that it is something you can do!

There are three basic elements to arranging the facets on a gemstone. They are: 1) the angle of the cut, 2) the rotation of the gem, and 3) the depth of cut. These three settings precisely locate every facet on a gem. How to make the adjustments varies slightly from one machine to another. However, all machines work on the same principles and there are only subtle variations on how to make the settings.

When cutting a gem, the design instructions tell you the index and angle for each facet. There is no guessing. The depth of the cut will be obvious when cutting. If your facets do not come together, you need to cut them deeper. If you cut them too deep - well, all beginners need to learn to use a light hand. Correcting over cut facets requires recutting the previous stages to the new depth. Hence the saying "Cut a little, look a lot."

Angle Setting The angle of your cut is set on a protractor, or read off a digital display. How to set the angle varies slightly with the different machines. Sometimes it is a matter of loosening a setscrew, adjusting the angle, then retightening the screw. On other machines, it involves turning a handle until you reach the proper angle.

Index Gears The index gear controls the rotation of the gem. They are available in a variety of sizes, but 64 and 96 are the most common. To set the index; you release a pin, rotate the gear to the properly numbered slot, then let the pin return to its holding position.

Depth Control This is actually called a "height setting," but it serves the purpose of determining how deep each facet is cut. While there are variations in how this is done on different machines, the principals remain the same. A coarse adjustment brings your setting in close, and then a fine control makes the final setting.

Cheater Due to subtle variations in your equipment, you will occasionally have a facet that will not lay flat on the polishing lap. A "cheater" control makes subtle, side-to-side adjustments. These are less than a full index number.

Lubrication Water, (often with additives,) is used as a lubricant. Each machine has a method of wetting the cutting laps. The most common is a simple drip tank. Its beauty lies in its simplicity. Simply open the valve to where you get a few drips per second. You want just enough to keep everything damp, without excessive splashing.

Speed Control Each machine has a method to control the speed of the laps. Many will also allow you to reverse the direction of rotation. As a rule, use higher speeds with coarse cutting, slower speeds when polishing.

Laps Laps are disks with abrasives on the surface. They are usually metal charged with diamond, but other materials and abrasives are used. They go on a revolving platform and are changed as needed.... The cutting and polishing procedure is done in stages. It begins by removing the excess material with a coarse lap. Next, the scratches are sanded out with a finer lap. Finally, a polishing lap is put on the machine for finishing.

Interested in faceting? Contact Gordon Billings or Beba Adams for information about the Vancouver Island Faceters Guild.

Quote: Any man who can drive safely while kissing a pretty girl is simply not giving the kiss the attention it deserves. A Einstein

ROCK OF THE MONTH

March's Birth Stones



Aquamarine



Bloodstone

March Birthstones: Aquamarine and Bloodstone



If you can picture the cerulean blue waters of the Mediterranean, you will understand why the birthstone for March is named Aquamarine. Derived from the Roman word "Aqua," meaning water, and "mare," meaning sea, this pale blue gem does indeed resemble the color of seawater. The ancient Romans believed that the Aquamarine was sacred to Neptune, the god of the sea, having fallen from the jewel boxes of sirens and washed onto shore. Early sailors wore aquamarine talismans, engraved with the likeness of Neptune, as protection against dangers at sea.

The association with water led to the belief that the Aquamarine was particularly powerful when immersed. Water in which this gemstone had been submerged was used in ancient times to heal a variety of illnesses of the heart, liver, stomach, mouth and throat. Aquamarines were also used to reverse poisoning and to aid in fortune telling.

The Aquamarine is a member of the beryl family. Beryl is a mineral that crystallizes within large grained igneous rocks on the earth's crust. It varies in color from clear to vibrantly colored gemstones such as the Emerald. Beryl was used as far back as 2,000 years ago to correct vision, and it continues to be used today in the manufacture of eyeglasses. It is a very hard mineral, making the Aquamarine a durable gemstone for use in jewelry.

Aquamarine varies in color from blue-green to a light sky blue, but gems containing green are often heat-treated to remove this less desirable color. The majority of Aquamarines, unlike other gemstones, are flawless. It is a relatively abundant gem, the largest deposits being in Brazil, but other sources of Aquamarine are in China, India, Australia, Africa, and the United States.

A gift of Aquamarine symbolizes both safety and security, especially within long standing relationships. Some people even say that the Aquamarine reawakens love in a tired marriage, so if you want to bring back that spark in your partner's eyes, you might consider this gem as an anniversary gift!

Alternate Birthstone

An alternate birthstone for March is Bloodstone, a dark green opaque quartz flecked with red spots. The name Bloodstone derives from the legendary belief that the red coloration resulted from the blood of Christ spilling onto green jasper during the crucifixion. For this reason, too, the stone has been called "martyr's stone." Bloodstone is mined in India, Brazil, Uruguay, Australia, and the United States. Ideal for carving into cameos and beads, this stone symbolizes courage.

Quote: The happiness of society is the end of government.
John Adams (an American Father of the Union and probably a Republican.)

WHAT'S THAT ROCK?

Rock Identification: A continuing Story

I want to continue this edition of the "Bugle" with some further explorations of rock identification by including this interesting article on Metamorphic Rocks by Geology expert Andrew Alden. I hope you find it as useful and interesting as I did. GB

Metamorphic rocks are the third great class of rocks. These are what happen when sedimentary and igneous rocks become changed, or metamorphosed ("changed in form"), by conditions underground. The four main agents that metamorphose rocks are heat, pressure, fluids and strain. These agents can act and interact in an infinite variety of ways. As a result, most of the thousands of rare minerals known to science occur in

metamorphic rocks. Metamorphism acts at two scales, the regional scale and the local scale.

How to Tell Metamorphic Rocks

The main thing about metamorphic rocks is that they are shaped by great heat and pressure. The following traits are all related to that.

- Because their mineral grains grew together tightly during metamorphism, they're generally strong rocks.
- They're made of different minerals than other kinds of rocks and have a wide range of color and luster.
- They generally show signs of stretching or squeezing, giving them a striped appearance.

The Four Agents of Regional Metamorphism

Heat and **pressure** usually work together, because both rise as you go deeper in the Earth. At high temperatures and pressures, the minerals in most rocks break down and change into a different set of minerals that are stable in the new conditions. The clay minerals of sedimentary rocks are a good example. Clays are surface minerals, which form as feldspar and mica break down in the conditions at the Earth's surface. With heat and pressure they slowly return to mica and feldspar. Even with their new mineral assemblages, metamorphic rocks may have the same overall chemistry they had before metamorphism.

Fluids are an important agent of metamorphism. Most rocks contain some water, but sedimentary rocks hold the most. First there is the water that was trapped in the sediment as it became rock. Second is the water that is liberated by clay minerals as they change back to feldspar and mica. This water can become so charged with dissolved materials that the resulting fluid is no less than a liquid mineral. It may be acidic or alkaline, full of silica (forming chalcedony) or full of sulfides or carbonates or metal compounds, in endless variety. Fluids tend to wander away from their birthplaces, interacting with rocks elsewhere. That process, which changes a rock's chemistry as well as its mineral assemblage, is called *metasomatism*.

Strain refers to any change in the shape of rocks due to the force of stress. Movement on a fault zone is one example. In shallow rocks, shear forces simply grind and crush the mineral grains (cataclasis) to yield cataclasite. Continued grinding yields the hard and streaky rock mylonite. Under greater heat and pressure, as metamorphic minerals such as mica and feldspar begin to form, strain orients them in layers. The presence of mineral layers, called *foliation*, is an important feature for classifying metamorphic rocks. As strain increases, the foliation becomes more intense, and the minerals may sort themselves into thicker layers. The foliated rock types that form under these conditions are called schist or gneiss, depending on their texture. Schist is finely foliated whereas gneiss is organized in wide bands of minerals.

Different degrees of metamorphism create distinctive sets of metamorphic minerals. These are organized into metamorphic facies, a tool petrologists use to decipher the history of metamorphism.

The Basic Metamorphic Rock Types

The sedimentary rock shale metamorphoses first into slate, then into phyllite, then a mica-rich schist. The mineral quartz does not change under high temperature and pressure, although it becomes more strongly cemented. Thus the sedimentary rock sandstone turns to quartzite. Intermediate rocks that mix sand and clay — mudstones — metamorphose into schists or gneisses. The sedimentary rock limestone recrystallizes and becomes marble.

Igneous rocks give rise to a different set of minerals and metamorphic rock types; these include serpentinite, blue schist, soapstone and other rarer species such as eclogite.

Metamorphism can be so intense, with all four factors acting at their extreme range, that the foliation can be warped and stirred like taffy, and the result is called migmatite. With further metamorphism, rocks can be turned into something hard to tell from plutonic granites. These kinds of rocks give joy to experts because of what they say about deep-seated conditions during things like plate collisions. The rest of us can only admire the laboratory skills needed to make sense of such rocks.

Contact or Local Metamorphism

A type of metamorphism that is important in specific localities is contact metamorphism. This most often occurs near igneous intrusions, where hot magma forces itself into sedimentary strata. The rocks next to the invading magma are baked into hornfels or its coarse-grained cousin granofels, another subject for specialists. Magma can rip chunks of country rock off the channel wall and turn them into exotic minerals, too.

Surface lava flows and underground coal fires can also cause mild contact metamorphism of the same degree as occurs when baking bricks.

Kornography

Q: What do you do with dead geologists?

A: Barium

WELCOME “NEW” MEMBERS

Dennis Cambrie, Membership

Membership Renewals continue to come in. We'd like to welcome back all those who renewed since the last meeting. Our club has 46 individual and family memberships to date. It's good to see that Aileen Park continues to be a member even though she has relocated to the wilderness of Alberta. As well we'd like to welcome back Lorne Hamilton, who is the most northerly member of our club. And to those hardy folks from the Port Alberni area, Garth and Ann MacFarlane who

rejoined us I'd like to extend a welcoming hand. We can also welcome Joyce Pelletier and Chris and Meredith McGill. I hope more of our past members rejoin us soon.

Did you know... A round man cannot be expected to fit in a square hole right away. He must have time to modify his shape. Mark Twain

FROM THE CUTTING FLOOR

Common Problems when cutting rough rock

Problems using your rock saw will occur at some point when slabbing rough. Pay attention to any unusual high pitch sounds during the sawing process. If this occurs, immediately shut the saw off. Check to see if the rock has shifted and is loose or if the blade is getting coolant. When the saw is turned off, note the duration and length of spin of the saw blade when turning off the saw. If the blade doesn't spin freely, and instead comes to an abrupt halt, then the blade could be in a bind. This occurs when the rock shifts in the vise and pinches the sides of the blade against the saw kept or when the blade becomes dull. When the blade becomes dull and requires sharpening (cleaning) or when the saw blade and carriage are out of alignment, any of these problems should be remedied before sawing resumes. A sharp saw blade is essential when sawing very hard or dense gemstones. When the blade needs sharpening, no need to take the rock out. Use a blade dresser or a piece of an old grinding wheel and clamp it to a board and attach this board to the vise ahead of the rock and in line with the diamond saw blade. Small "C-clamps" are handy for this procedure. If you clamp the blade dresser at an angle so that it will clean both sides of the saw blade, and then reposition the dresser for the next slab, so that little of the dresser is used, the dresser will last a long time. (Use these small pieces of grindstone or blade dresser in the tumbler for the rough grind stage. The grindstone pieces can be placed in the sun for a while to drain any oil reserves then rinsed in hot water and soap before adding to the tumbler.) Make sure the "C-clamp" will clear the top of the saw hood before closing. Several minutes of sharpening is all it takes. We leave the dresser clamped on the vise, for hard or metallic material, which demands that the blade be sharpened with each slab cut. REMEMBER: use wooden wedges for an odd shaped rock (almost every rock) to securely hold your rock in the vise to prevent it coming loose or starting to slip, and SHARPEN REGULARLY especially for agate, jasper, metallic material, etc.

Final Thought: The paradox of education is precisely this - that as one begins to become conscious, one begins to examine the society in which he is being educated.

- James A. Baldwin