



# Lake City Rockhound News

Newsletter of the North Idaho Mineral Club, Inc.  
P.O. Box 1643 Hayden, ID 83835

August, 2016  
Volume 15, No. 8

We meet on the 3<sup>rd</sup> Thursday of the month at the Lake City Center, 1916 Lakewood Drive, Coeur d'Alene in the Library, from 6:00PM to 8:00 PM. Visitors and Guests are Welcome.  
Our web site: <http://www.northidahomineralclub.com>

## Contents

Meeting Information.....	1
Meeting Minutes.....	1
Vibratory Tumbler.....	1
New Meeting Topic.....	2
Sagenite.....	2
How Do Diamond Blades	
Work?.....	3
Flat Lapping Without a	
Machine.....	3
Calendar of Events.....	4

## This Month's Meeting

**Regular Meeting** – August 18, 2016

**The Meeting Program:**

**Cinderhill Method of Wire Wrapping**

**Refreshments:** Bev Bockman and Diane Rose

There will be a silent auction and scholarship raffle

Buy your tickets today.

## July 2016 Meeting Minutes

Instead of our normal meeting, the July meeting was our annual potluck picnic, with a silent auction of items from the Riley collection. No meeting minutes were taken.



## How to put together a \$600+ Vibratory Tumbler for Half the Price

By Dan Imel, Rochester Lapidary Society  
From The Rockcollector, Nov. 2012

Ever have that great urge to have a 45-lb. vibratory tumbler? Wince at the \$600+ price tag that one of the best units currently on the market, Thumbler's Tumbler, carries? How can you get around that? Harbor Freight carries a vibratory tumbler they rate at 18 lbs. The unit is well engineered and can run a larger barrel. If you look at the reviews, the barrel is too thin for rock tumbling but the unit itself is pretty good. I decided to see what



I could do with one of these. If you watch the sales, Harbor Freight frequently has them for sale for \$150. Use their 20% off coupon available in most Sunday papers and you

now have a large tumbler for only \$120. I'd looked at these tumblers for a few years now and was always scared off by the barrels. The solution: Buy the Thumbler's Tumbler barrel. You may have to order the tumbler online if your local Harbor Freight doesn't have them in stock or you don't have one locally. Not to fear, they have a flat rate shipping of no more than \$6.99 per order.

Now, time for the modifications first, throw the tumbler barrel away. It's way too thin for rocks. You might save it for the polish stage but, in my experience, it's also so thin that it distorts when you tighten down the hand knob and isn't worth the effort. Mine had holes in it after a little over 200 hours of 80 grit and Harbor Freight doesn't sell replacements. Keep the washers, etc. You'll need to search the web for the Thumbler's Tumbler 45-lb barrel. I found a place that sells them for \$180 by the time you add shipping.

Next, even before you use the tumbler the first time, replace the 12-inch, 3/8-inch threaded rod that holds the barrel in place. Why? The threading tolerance is too tight for the grit you'll get on it while tumbling and the hand knob will lock up. Normal bolts and nuts don't have as tight of a tolerance and don't have an issue. It's not pleasant, disassembling the tumbler from underneath with a full barrel of rocks on top you can't remove.

To remove the original rod, with the barrel off, remove the four bolts holding the motor bracket to the plate the barrel

sits on. This gives you access to the nut on the underside holding the rod in place. A new 12 inch rod is about \$2 at most major home improvement stores. While you are at it, buy two large 3/8 washers and two smaller 3/8-inch washers and place the largest washers closest to the plate the rod passes through on each side and the smaller next to that, add a 3/8-inch lock washer on each side then thread on two 3/8 nuts and tighten, one from each side, and you are done. You'll also need a new hand knob to hold the barrel down. They are available for less than \$5 at most wood working stores, 3/8-inch. Cost of all parts should be less than \$10 and you may have many of the parts already. I couldn't try the original hand knob from Harbor Freight, since I was never able to get it off the rod. It may work with a different rod. If it threads on or off hard when you get grit on the rod, replace it before it locks up. I'm a wood worker and buy bulk bags of knobs for less than \$2 each knob.

Now for that added touch that may be totally unnecessary but doesn't cost anything. Find the lid from a 5-gallon bucket. Dry wall buckets are great. Drill a 3/8 to 1/2-inch hole in the center. Place the lid face up between the barrel and the plate the tumbler rests on. I'm figuring that the lid will reduce wear on the part of the barrel that tends to wear out first and its free, so why not?

You'll have to tighten the hand knob down tightly so the barrel doesn't move but this has been true for every vibratory tumbler I've had that's shaped like a donut. I have about 2000 hours on the tumbler so far and it seems to work as well as the \$600+ version for roughly half the price. I'm not putting the Thumblers Tumbler down, they make a very fine product. I'm just providing a more affordable alternative.

#### **45 Pounds too big?**

Not into 45-lb. tumblers? Think 18 lbs. would be more than enough? Do the same thing with Harbor freight's 5 lb. tumbler and Thumblers Tumbler's 18 lb. barrel. Total cost should be about \$130.

On the weight differences, the Thumblers Tumbler's barrels are only slightly larger than their Harbor Freight counterparts. I think the difference is that the Harbor Freight tumblers were designed for polishing shell cases, etc. and, as such, have a lower weight to volume rating than rock tumblers.

For barrels, I recommend The Rock Shed. They seem to have some of the best prices I was able to find online.  
<http://www.therockshed.com/tumbler3.html>

### **New Meeting Topic**

It has been a while since we have had a class on creating cabochons. At the upcoming meeting, we will firm up date(s), times and a place for a class on cutting cabochons.

There are several methods to do this, and we will have several instructors who will show how they do it. Each student will end up with a cabochon they have created.

### **Sagenite**

**via The Rockhouser, July, 2012**

Agates with inclusions are some of the rarest and most beautiful agates in the world. These inclusions may be sagenitic (sagenite), plume, dendritic, or moss. During our club's November field trip to the Afton Canyon area near Barstow, CA, we were directed to a barren hill in Baxter Wash. Sylvia Cliffe, one of our club's most experienced members, informed us that we were going to search the hillsides for Sagenite. This prompted the question: what is Sagenite? and your editor was tasked to provide an explanation. After some research I can report that the term "Sagenite" is perhaps a misnomer - a term that refers to a characteristic of agates whereby the material displays rays, or sprays, of crystal growth within the substance.



Collector Pat McMahon, of the Sedona, Arizona, Gem and Mineral Club, has identified sagenite from over 250 different agate deposits worldwide. She offers this information for our readers: Sagenite, or more accurately, sagenitic agate is any agate having acicular or needle-like mineral growths. These hair-like filaments are often arranged in fans or sunbursts and may come in a wide array of colors. My belief is that at least a little sagenite can be found at most agate fields. It is impossible to say today what percentage of the original deposits were sagenitic, but in the hundred or so agate fields I have been to, a very small percentage of the agate has sagenitic inclusions. With the exception of a small number of fields, probably less than five percent of the available agate at fields I've been to is sagenitic. Those few agate fields that have a higher incidence of sagenite offer a rare and exciting treat to the

collector.

Plume is surprisingly more common than most of us might believe. Many collectors know of Friday Plume, Graveyard Point, Del Norte (Colorado), West Texas, and Mexican Plume. The oxides which form plume and other inclusions are quite common. If they are present and conditions are right, the inclusions form. I have plume from over a hundred agate fields in my collection. Inclusions occur where iron oxide, manganese oxide, or other oxides are present when the agate is formed. The oxide minerals grow in the agate when it is in a liquid or gelatinous state. The inclusions grow and are supported by this liquid medium. If sagenite inclusions grow outside of the gel, the tops of the needles resemble a pin cushion. Plume and moss inclusions grow outside the gel as well.

In very rare instances, plume and sagenite are found in the same rock. Plume and moss are often associated together. I have found sagenite in or near moss only a few times. Multicolor plumes appear to be more common than multicolor sagenitic sprays. I don't understand this. It may be coincidental. It is based on examining several thousand specimens. I have not yet seen plumes or sagenite needles penetrate bands in agate. My belief is that sagenite and plume are formed in silica gel after the gel fills or partially fills the cavity. Banded agate apparently forms at a different time. Some of my favorite agates have complete fortifications next to inclusions.

The thrill of finding a quality agate in the field is only topped by making that perfect, often lucky cut in the saw. Unlike banded agate which often gives the cutter multiple quality slabs, we seldom get more than one outstanding cut per rock with plume or sagenite. As a collector, I am very selective in what I pick up in the field and still less than 5% of what I cut goes in my display case. That's the nature of what we do. A very small quantity of agates are exceptional.



### ***How Do Diamond Blades Work?***

**from Graves Tech Notes (Author unknown); via Low Country Diggings, Sept. 2009**

Diamond blades don't really cut like a knife, they grind. During the process, individual diamond crystals are exposed on the outside edge and side of the rim. These exposed surface diamonds do the grinding work. The metal matrix locks each diamond in place. Trailing behind each exposed diamond is a "bond tail" (also called a comet tail), which helps support the diamond.

While the blade rotates on the arbor shaft of the saw, the stone is pushed into the blade. The blade begins to grind (cut) through the stone, while the stone begins wearing away the blade.

Exposed surface diamonds score the stone grinding it into a fine powder. Embedded diamonds remain beneath the surface. Exposed diamonds crack or fracture as they cut, breaking down into even smaller pieces. Hard dense rocks cause the diamonds to fracture even faster. The stone also begins wearing away the metal matrix through abrasion.

Highly abrasive rocks will cause the matrix to wear fast allowing new layers of diamond to continue cutting. This is the purpose of periodically "dressing" the blade with an abrasive block.



### ***Flat Lapping Without a Machine***

**from the Glacial Drifter, March 2003**

The process of flat lapping is so simple that anyone can do it even if you don't have a flat lapping machine. So go to it and polish the bookends you want, or that clock face. Just get a piece of aluminum about 12-14 inches square. (Larger for larger pieces.) Place it on a flat surface. Take a teaspoon of 120 grit (or even 90 grit if you have saw marks on your slab.) Mix your grit with Vaseline or water. (I like Vaseline because it holds the grit better, doesn't dry out and doesn't splash.)

Now take your slab to be polished and dop a piece of wood to it so that you have a handle and can hold it down on the grit. Just keep twisting it over and around on the grit. Be sure that your grit is always under the slab. Don't run it over dry aluminum. Move the slab in any pattern you wish, adding grit as you feel necessary. Keep at it until all the saw marks are well gone. Wash the stone and aluminum between grades of grit using progressively finer grits as you go. The slab should now be ready for polishing.

To polish, use a piece of leather about 12x12 inches. Stick it to a board and keep it for polishing only. Don't tack it down because the tack heads can scratch. Put your favorite polishing mix all over the leather and start polishing your stone. This is the oldest way to polish slabs and it still works well, if slowly. In answer to the statement that it will take a long time, a question, "What else would you be doing?"



North Idaho Mineral Club  
 P.O. Box 1643  
 Hayden, ID 83835



**First Class Mail**

<b>NIMC Officers</b>			
President: Dale Ruperd (208-664-2712)			
Vice-President: Corey Brenner (208-640-4743)			
Treasurer: Carl Chapin (208-772-9049)			
Secretary: Diane Rose (208-659-6173)			
<b>Other Positions</b>			
Show Chair 2016: Dean Hutchinson			
Newsletter: Michael Burton (208-772-9347)			
Federation Director: Dale Ruperd			
Federation Delegate: Bill Johnson (208-765-3099)			
Webmaster: Michael Burton			
Programs/Membership: Bev Bockman (208-773-5384)			
<b>Affiliations</b>			
AFMS – American Federation of Mineralogical Societies			
NFMS – Northwest Federation of Mineralogical Societies			
S.C.R.I.B.E.			
ALAA – American Lands Access Association			
<b>Gem Show Schedules</b>			
Jul 29-31	10:00-6:00 10:00-6:00 10:00-4:00	Willamette Agate & Mineral Society (AFMS & NFMS Mtgs)	Linn Cty Expo Ctr, Albany, OR
Aug 5-7	10:00-5:00 10:00-4:00	Far West Lapidary & Gem Society	North Bend Comm. Ctr, 2222 Broadway, Bend, OR
Aug 13-14	9:00-5:00 10:00-5:00	Maplewood Rock & Gem Club	Maplewood Rock & Gem Clubhouse, 8802 196 <sup>th</sup> St SW, Edmonds, WA
Sep 10-11	9:00-6:00 10:00-4:00	Clallum Cty Gem & Mineral Assoc.	Vern Burton Community Ctr., 308 East 4 <sup>th</sup> St, Port Angeles, WA
Sep 10-11	10:00-5:00 10:00-5:00	Marcus Whitman Gem & Mineral Soc.	Walla Walla Cty Frngds, 363 Orchard St., Walla Walla, WA
Sep 17-18	10:00-5:00 10:00-4:00	Southern WA. Mineralogical Society	Castle Rock Frngds, 120 Fair Lane, SW corner of Hwy 411 and Cowlitz River, Castle Rock, WA