



# WAYNE COUNTY GEM AND MINERAL CLUB NEWS

Volume 38 Number 10 October 2010



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## *President's Message*

The colors are starting to change and it's time for our club to review what we've done and where we're going. Is it time for a change? Elections will be held at our next meeting, Oct. 8<sup>th</sup>. Most positions will be voted upon. Please make your feelings known and participate in helping our club go in the right direction. We will be creating cards to reach out to past members to let them know they are missed and not forgotten. Since the meeting is the night before the Walworth Dig, we'll get out early and review mine safety.

Our field trips have been well attended and enjoyed by most. Specimens collected will be on display at Dave Kords Rock & Mineral Show on Oct. 2 & 3. Wildacres visitation was enjoyed by participants and more wish to go next year. Our programs have ranged from speakers with slide shows to gem tree making which even the most manually-challenged of us managed to succeed at.

You have an opportunity to participate in helping this coming weekend at Dave Kord's show. We will meet on Fri. Oct 1<sup>st</sup> at 6 PM at St. Michael's School in Newark to make sand bags for the sluice and grab bags for the club table. Please bring in small specimens you can donate and we'll put our packages together. One display case opportunity exists for someone wishing to display. Please call me at 607-868-4649 so the correct number of cases are transported and set up. Anything to make our club's presentation there interesting would be appreciated.

Finally, it's a time to renew your membership before the Walworth Dig Oct. 9<sup>th</sup> & 10<sup>th</sup>. Stop by the club's table at the show or come to the next meeting to update your membership.

**Have fun and be safe!**

*Pat*

## Upcoming Events

Oct. 1st : 3 PM set up displays 6 PM assemble sand & grab bags

Oct 2nd & 3rd: Wayne Co. Gem Show, Sa. 10-5, Su. 10-4

Rt. 88 St. Michael's School Newark NY

Oct. 8<sup>th</sup>: 7PM WCGMC monthly meeting

Oct. 9<sup>th</sup> & 10<sup>th</sup> : Walworth Quarry Open House Dig

Sa. & Su. 6:45 AM safety meeting

Sat. 7AM – 2PM Sun. 7 AM – Noon

Oct. 23<sup>rd</sup> & 24<sup>th</sup>: Rochester Gem, Mineral. Jewelry & Fossil Show  
Monroe Co. Fairgrounds, Henrietta NY

## Let's Make Some Tumbled Gemstones!

<http://geology.com/rock-tumbler/rock-tumbler-instructions.shtml>

So you are interested in making tumble-polished gemstones? That's great! I would like to show you how easy it is to turn the rocks shown on the left side of the photo at right into the tumbled gemstones shown on the right side of the photo. We will go step-by-step through the tumbling process using plenty of photos -- so that you will understand exactly how it is done.

The tumbling process is simple. You start with some broken rocks, known as tumbling rough, (as shown at right) and place them into a tumbling barrel (like the black barrels in the photos in the right column) with some abrasive grit and water. The barrel is then rotated over and over 24 hours a day on a rock tumbler that is powered by a small motor.

All of this tumbling wears the rough edges off of the stones and produces smooth, rounded pebbles. These are then run through a polishing step to produce the shiny gemstones shown in the right side of the photo. Tumbling rocks is easy and fun. You can use the tumbler menu at right to progress through this lesson. We hope that you have a lot of fun!



Here are some of the rocks that we will tumble while writing this article. Samples of the roughly broken rocks are on the left and the finished gemstones are on the right. Notice how rocks on the left are angular in shape while rocks on the right are nicely rounded (and quite a bit smaller). That's what happens during the grinding steps of tumbling. From top to bottom the materials are: brown agate, rose quartz, green aventurine, amethyst and tigereye.

	Step 1	Step 2	Step 3	Step 4	Step 5
Barrel Size	Coarse Grit 60/90	Fine Grit 120/220	Pre-Polish 500 Grit	Polishing Compound	Burnish (Soap)
Pounds	Tablespoons				
1.5	3	3	4	4	1/2
3	4	4	5	5	1
6	10	10	12	12	2
12	20	20	24	24	4



Be sure to clean the top of the tumbler barrel where the lid will seat. Just one piece of grit on that rim will cause the barrel to leak. Be clean to avoid a mess!

### Step 1: Coarse Grind

Inspect the rocks that you are about to tumble. Make sure that they are the same hardness and of various sizes. Remove any rocks that are cracked, have deep voids or have extremely irregular shapes. These should be discarded or broken. Fill the barrel 2/3 to 3/4 full of high-quality rocks. (See our tumbling rough page for additional tips.)

Note: If you are tumbling rounded beach rocks or rocks that have been pre-tumbled and are satisfied with the shape of the rocks, you may skip the coarse grind step and go straight to the fine grind. But if your rocks are broken, have jagged edges, or you would like them to be a bit more rounded, put them through the coarse grind first.

The barrel must always be at least 1/2 full for the tumbler to operate properly. But don't overload it! Barrels more than 3/4 full (including grit and water) may be too heavy for your tumbler's motor and there might not be enough space inside for the rocks to tumble. A 3 pound tumbler has a motor designed to tumble a barrel that weighs up to 3 pounds, a 6 pound motor can handle a barrel or two barrels weighing 6 pounds total, etc. If you're not sure if the barrel is too full, weigh it after adding the water.

Add the appropriate amount of tumbler grit according to the tumbler's instructions, or use the chart on the right.

Add enough water to reach the bottom of the top layer of stones, but not so much that they are covered. You want to see some of the rock above the water. See photo to the right.

Use a paper towel to clean the inside and outside rims of the barrel and the edges of the lid. Make sure the surfaces that will form the seal are clean and dry.

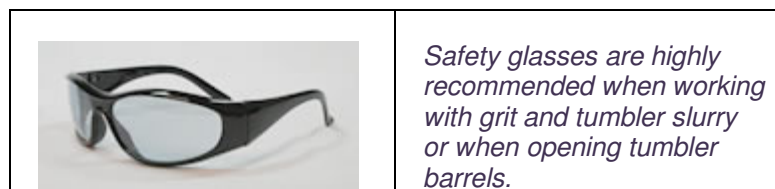
Place the lid on the barrel and seal the barrel. Put the barrel on the tumbler and start the motor. And we're off!

Stick around for a few minutes to make sure the tumbler is running smoothly and the barrel isn't leaking. If the barrel is leaking, stop the machine, remove the lid and re-clean the surfaces of the lid and barrel that must make the seal. Double-check that they are clean and dry. Replace the lid securely and proceed. Also, check the tumbler in a few hours again to make sure it's still running smoothly. After this, it can probably be left unattended, but it's not a bad idea to check up on it every day or so.

If you have a double-barrel tumbler, you might will need both barrels charged (loaded) for the tumbler to function properly. We recommend filling both barrels with batches of coarse grind of the same hardness so that they can be combined later on. Then you can have one barrel running a batch of fine grind while the other prepares more rough.



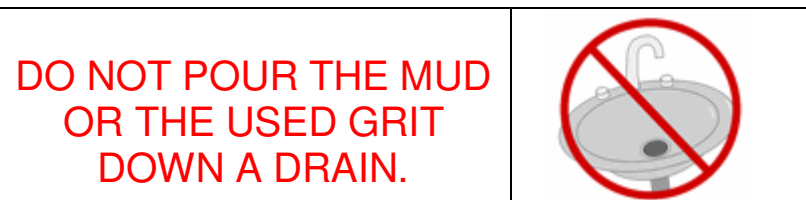
*A loaded tumbler barrel. It contains tumbling rough, tumbling grit and enough water to almost cover the rocks. Don't add too much water and be very careful not to get rock dust or grit on the rim of the barrel where the lid will seat.*



Let the tumbler run for 7 days, 24 hours a day. You can open the barrel to check the slurry (the muddy liquid inside) or to release gas build-up (gas build-up is usually not a problem) occasionally if you like, but be sure to clean and dry the seal areas before replacing the lid! After 7 days, stop the tumbler and open the barrel. It will look like a barrel of mud!



*About four pounds of tumbling rough of various sizes and coarse grit ready to load into a six pound tumbler barrel. Tumbling different sizes of rough in the same batch produces better results than tumbling rock of a single size. If we filled the tumbler with the 1 to 2 inch-size rock on the left there would be very few points of contact between the rocks during the tumbling process. Mixing in smaller rock fills the spaces between the large particles, increase the amount of abrasion and delivers grit to all surfaces of the large rock.*



It can clog your plumbing system. Instead empty the barrel into a colander over a plastic bucket or a disposable container, like the bottom half of a milk jug or 2-liter bottle. Rise thoroughly with a weak stream of water. Wear safety glasses while rinsing to protect your eyes from a possible splash of muddy water.

Now that you have rinsed the rocks, take a good look at them.

Virtually all of the shaping is done in this first step. The other steps only smooth the rock, not shape it, so the shape you see now is what you will end up with if you continue to the fine grind. If you would prefer your rocks to be more rounded, you should repeat this step with fresh coarse grit until they are shaped to your liking. It may take a few re-runs, but the extra wait is worth the results. Don't be in a rush! Quality takes time. We are picky. When we tumble most loads of rock that aren't beach rocks or pre-tumbled will go through the coarse grind at least twice. If some of the batch is ready to go on to the next step, you should set aside these rocks to wait for the others to catch up.

If there are any rocks that have deep cracks or pits, these rocks should not be tumbled with the fine grind. Particles of the coarse grit will get trapped in these voids and contaminate the next step, scratching the other rocks.



*Yikes! This is what things will look like when you open the barrel after running it on the tumbler for seven days. Don't dump it down the drain!*



Break these rocks and include them with your next batch of coarse grind. If the cracks or pits are very shallow, it might be possible to tumble them out, but this should only be done in the coarse grind. Don't think that you can scrub the grit out; it's next to impossible! Be safe and save them for your next coarse batch.

If you are repeating the coarse grind, use fresh grit. The old grit can't be reused because after seven days it breaks down too much to be effective in shaping (yet will still effectively scratch rocks if it contaminates the fine grind). When charging the barrel, you might need to add new tumbling rough to bring the volume of the barrel to at least 1/2 full. If you don't have more rough, you can use plastic pellets or ceramic media to bring the volume to 1/2 full.

If you are proceeding to the fine grind, first CLEAN the rocks, barrel, and lid THOROUGHLY. This cannot be stressed enough. If you have grit or slurry left in the barrel or on the rocks when you proceed to the next step, you will contaminate the load and have to start over with the previous step. The particles of leftover grit will scratch the rocks during the next step. While these scratches may be very tiny, the end result could be that the rocks do not polish to a high shine. Thorough cleaning is very important, so take your time and do a good job. You can use paper towels or an old toothbrush to clean the inside of the barrel. Pay particular attention to the seal area and the bottom edges of the barrel - lots of gunk might be trapped here and will not only contaminate your batch, but might cause the barrel to leak. If you opt to use a toothbrush, mark it as "Coarse grind only," etc. so that you remember what step it can be used for. You should have a separate toothbrush for each step; you don't want to contaminate the barrel the next time you are cleaning!

## Step 2: Fine Grind

Once you have enough rocks for the fine grind, place them in a barrel and add fine grit as shown in the chart to the right:

Add enough water to reach the bottom of the top layer of stones, but not so much that they are covered. If necessary, add plastic pellets to bring the volume of the barrel to at least 1/2 full. Check the seal area to be sure that it is clean and dry. Place the lid on the barrel and seal the barrel. Place the barrel on the tumbler and start the motor. Again, stick around for a few minutes to make sure the tumbler is functioning properly and the barrels aren't leaking. Check back again in an hour, and periodically after that. Let the fine grind run 24 hours a day for 7 days, then check the rocks. They should appear shiny when wet.

## Step 3: Prepolish

Once you have enough rocks for the extra fine grind/prepolish step, place them in a barrel that has been thoroughly cleaned. (If you do not clean the barrel and stone thoroughly a few pieces of grit from the previous step will contaminate your pre-polish - that will produce scratches on your finished gemstones!)

At this step some people use plastic tumbling pellets to cushion the rocks. After your barrel is about 2/3 to 3/4 full of rocks and pellets add water to slightly below the level of the rocks. Then add the extra-fine grit (sometimes called pre-polish) as shown in the chart below, seal the barrel and you are ready to tumble.



*We poured the contents of the tumbler barrel into a plastic colander. The colander allows the water and grits to drain through (into a bucket - not down the drain). The rocks are caught in the colander and the water passes through. Don't use a metal colander because it will mark the rocks.*



*Wow! Here's what the rocks look like after we rinsed them thoroughly. They are now rounded and have a surface like frosted glass. Be sure to rinse the rocks THOROUGHLY. If some coarse grit remains on them into the fine grind, your gemstones will have lots of scratches on them. Being very careful and very clean at every step of the process is extremely important. You don't want to wait an extra week for your gems! Or, open the barrel after the final polish step and see scratches on your rocks - that will require starting over again.*

	Step 1	Step 2	Step 3	Step 4	Step 5
Barrel Size	Coarse Grit 60/90	Fine Grit 120/220	Pre-Polish 500 Grit	Polishing Compound	Burnish (Soap)
Pounds	Tablespoons				
1.5	3	3	4	4	1/2
3	4	4	5	5	1
6	10	10	12	12	2
12	20	20	24	24	4

***Here are our recipes for different size tumbler barrels. If your barrel size is not listed here you can estimate the amount needed or consult the instructions that came with the tumbler.***

Run the prepolish step 24 hours a day for 7 days. When you open the barrel, the rocks, slurry and pellets will look like a funny tapioca (see image to right)

Now, gently pour the contents of the barrel into a colander. Rinse the rocks over a bucket or disposable container

**(Remember: don't pour the mud or used polish down a drain!)**

To easily separate the rocks from the pellets, you can put them in a small container of clean water. The pellets will float to the top and can be skimmed off. The rocks should have a slight luster when dry.

To make sure that the rocks are ready for polishing, perform this simple test: take an old towel or piece of felt and barely dampen it. Sprinkle a small amount of polishing powder on it and rub one of the rocks vigorously over the powder. If you see a definite shine, the rocks are ready to proceed to the polishing step. If there is no shine, or if the rocks don't show luster when dry, you should repeat the prepolish step, checking every couple of days, until the desired results are achieved.

#### Step 4: Polish

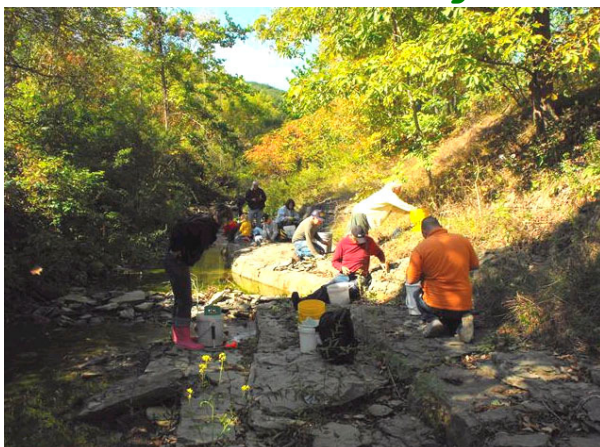
Clean the barrel, lid, and stones as before. Charge the barrel with stones, the appropriate amount of rock polish as indicated in the table above, and water. Add plastic pellets for cushioning until the barrel's volume is 2/3 to 3/4. Let the polish step run 24 hours a day for 10 days. The rocks should look shiny when dry. If the rocks have not polished to a high gloss or appear to have a film on them, you may want to try burnishing them to see if they will gloss up a bit.

#### Step 5: Burnishing

Just as before, clean the barrel, lid, and stones. You should be an expert at clean tumbling by now. Then, gently place the stones back in the barrel, and add soap according to the table above. Classic Ivory Soap is recommended - do not use a soap that contains abrasive particles. Grate or thinly slice the bar until you have the appropriate amount. Do not use liquid soap, as some of them contain oils that can harm the rubber barrel, break down the polish, and effectively un-polish your gems. Add clean plastic pellets and water. Allow this mixture to run for 1-2 days.

When you open the barrel at the end of the burnishing step you will find a thick froth of suds. Under the suds are your sparkling gems. Rinse them with clean water, then dry them off.

#### **Cameron Fossil Dig**



*This isn't a milkshake. It is the frothy foam of prepolish and plastic pellets after running in our tumbler for ten days.*



*Prepolish foam and rocks after being dumped into our colander*

**Ziggy:** When is a palm tree out of date?

**Iggy:** When it's dated.

Our gem trees really took shape at the last meeting thanks to Dave Millis's hands-on instruction & materials. A couple of these will be making an appearance in the Straw Draw Showcase at the Oct. show. What can You contribute?



**WAYNE COUNTY GEM AND MINERAL CLUB, INC.**  
**MEETINGS:** Held 2<sup>nd</sup> Friday night of each month at 7:00pm at  
Park Presbyterian Church basement, Maple Court, Newark, NY

**WEBSITE:** [www.wcgmc.org](http://www.wcgmc.org)

**ORGANIZED:** 1973 **INC.** 1976

Affiliated with the AFML & EFML Societies since 1973.

**OFFICERS:** Elected at the October meeting, taking office in  
November for a 2-year term.

**FISCAL YEAR:** Oct. 1<sup>st</sup> to Sept. 30<sup>th</sup>.

**ANNUAL MEMBERSHIP CLASSES & DUES (due Oct 1<sup>st</sup>):**

\$10.00 JUNIOR or STUDENT  
(18 yrs > with no parents in the club)  
\$15.00 REGULAR or ONE SINGLE ADULT  
(Over age of 18 years old)  
\$20.00 FAMILY MEMBERSHIP  
(Includes 2 adult votes and children)

*Send dues & SASE with your info to:*  
WCGMC, P.O. Box 4, Newark, NY 14513

**OBJECTIVE:** TO STIMULATE INTEREST IN THE EARTH  
SCIENCES, IN COLLECTING AND CLASSIFICATION OF MINERALS,  
AND IN THE ART OF GEM CUTTING.

The public is welcome!!

## 2010 JEWELRY, GEM, MINERAL, FOSSIL SHOW & SALE

**October 2nd 10:00am - 5:00pm**  
**October 3rd 10:00am - 4:00pm**

**BEADS CRYSTALS FOSSILS**

**JEWELRY**

**DOOR PRIZES**



DISPLAYS  
BY  
THE WAYNE  
COUNTY GEM &  
MINERAL CLUB

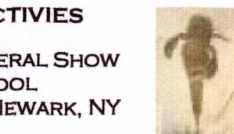
**MINERALS FROM AROUND THE WORLD!**

**FREE CHILDREN'S ACTIVITIES**



FOWLERS  
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JEWELRY

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Admission  
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or Call (315) 986-1171. Thank You!!!

More Flyers at:

<http://www.wcgmc.org/resources/20104x4Flyer.pdf.pdf>

**Wayne County Gem and Mineral Club**  
P.O. Box 4  
Newark, New York 14513-0004

First class:  
dated meetings  
and time valued.