

WASHINGTON AGATE & MINERAL SOCIETY NEWSLETTER

Volume XVI ISSUE 9

SEPTEMBER 2013

OLYMPIA WA

WEBSITE: [HTTP://WWW.WAMSOLYMPIA.WORDPRESS.COM](http://www.wamsolympia.wordpress.com)

REFRESHMENT LIST:

SEPTEMBER - GREG TOLBERT

OCTOBER - MIKE TANAKA

NOVEMBER - THE HOLMQUISTS

DECEMBER - CHRISTMAS PARTY

TREASURY REPORT:

The checking stands at \$6404.91, plus we own 20 tables.

BUY...SELL...TRADE

This column is offered free to WAMS members to buy, sell or trade equipment or material related to rocks or minerals.

SHOP TIP BY BOB O'BRIEN

We have collected material coated with iron stains. Using muriatic (hydrochloric) acid bleaches and damages rocks. Oxalic acid is most effective when warmed, but if left too long, stains the rocks. I tried "Iron Out" sold at Lowes. I am pleased with the results. It doesn't damage calcite. It removes heavy stains or limonite buildups without damage to pyrite. Light stains will remove in one day. Pyrite takes about three solution changes and about 4 days. I have been able to salvage crystals that I was keeping in the discard pile. To use it, I mix about 1/4 cup to 1.5 gallons of lukewarm water. It is not very corrosive and is sold as a stain remover for sinks and clothing. Lowes carries it in the plumbing area.

FISHING FOR DINOSAURS

As Paul Sereno puts it, he went "fishing for dinosaurs" in Africa, and what he wound up with were two prize catches indeed. Sereno, a professor of paleontology at the University of Chicago, and his colleagues unearthed the remains of two new dinosaur species--a fierce, fleet-footed hunter named *Afrovenator abakensis*, and as-yet unnamed sauropod akin to the *Brontosaurus*.

Sereno said these finds, excavated in the Sahara Desert in Niger, represent the first Cretaceous-era (145 million to 65 million years ago) dinosaur fossils from Africa, a continent that's thus far been sorely underrepresented in the fossil record. "As a result of this find, we see Africa evolving in isolation, and we're getting (examples of) the first animals that survived there that were different from animals evolving

elsewhere," says Sereno of the expedition, conducted in 1993. "We opened up a new chapter there. We went fishing for dinosaurs, and we found two of the larger ones." Also found were fossils of various fish, turtles, and crocodiles--bones that offer proof positive of the prehistoric Eden the Sahara once was.

The carnivorous dinosaur stood about six feet high and was about 27 feet long--smaller than a *T. Rex* but larger than the *Velociraptor* featured in the movie *Jurassic Park*. The sauropod was a 60-foot-long giant upon whom *Afrovenator* apparently fed, judging from teeth and other telltale evidence from the hunter found with the bones of the lumbering herbivore. As Sereno tells it, the size disparity between the two is akin to a dog attacking an elephant, but *Afrovenator's* ferocity enabled it to subdue the larger animal.

Amazingly, it took them just one day of digging to record the find. The beds where the fossils were taken have been known for decades, but the remoteness of the area and the logistical nightmare of mounting an expedition across the world's largest desert has always made getting to the site a difficult task.

Caves: Caves are natural cavities large enough for a person to enter. Most caves are found in carbonate rocks like limestone and were formed by water dissolving the calcium carbonate. Caves pose special dangers to visitors due to hazards that may require special skills and equipment. (Unless outfitted like a Navy SEAL, the caves have you at a disadvantage.) In addition to falling rocks, bottomless pits, tight passages, bats, snakes, and foul water (to just scrape the surface), some caves may contain naturally occurring uranium deposits and high levels of radon gas. The entrance sign "Enter at your own risk" was put there for a purpose.

Fossils: Fossils are evidence of past life, preserved in sedimentary rock. Vertebrate fossils may NOT be collected for personal or commercial use on public land. Anything with a backbone or a spinal column falls into this category. Other "non-significant" fossils, such as coral, plant casts, mollusks, and insects are available for collection. Please assist in the management of your National Forest by reporting the location of vertebrate fossil finds.

LOCAL FIELD TRIPS (PUB. WSMC)

CMS, WMSC = Cascade Mineral Society. Brian Williams (206) 290-2312 email bwaters2011@gmail.com
 Ed L = Ed Lehman (425) 334-6282 wsmced@hotmail.com
 WSMC = Washington State Mineral Council, use Ed above.
 BC Wagon masters: Clair Belzer 604-946-8656
 Kit = Kitsap Rock club: Tony Schackmann 360-372-2777
 LkSd = Lakeside Gem & Mineral club. Andy Johnson 509-546-1950
 Maple = Maplewood club: Don Furey 425-348-4827
 Msvl = Marysville club: Ed Lehman 425-334-6282
 Mt. Baker club: Kris Menger 360-927-0994 kmenter@comcast.net
 East King = East King Co, Norma Kikket, 206-612-3113
 N.W.R. = NW Rockies & MT Baker clubs: Kathy Earnst 360-856-0588 or Ed Lehman 425-334-6282
 Pvgm = Puyallup Rock Club Mark Bauman 253-756-8636
 Bellv = Bellevue, Bruce Himko, 425-957-1284
 Skagit = Skagit Rock Club: Vi Jones 360-424-8340
 Pebb = Whidbey Pebble Pushers: Dick Edwards 360-579-2807
 Pow Wow club = Cliff Matteson (253) 475-8433
cliff.conniematteson@gmail.com
 Longview = Longview club Emmett Johnson 360-636-3491
 Ashwood Oregon Darrell Friend 541-489-3252, web page www.ashwoodrockstock.com
 Eking = East King Norma Kikkert, kev1123@hotmail.com
 WAC - Washington Agate Club
 Yak = Yakima Rock Club Jerry Wichstrom 509-653-2787
jewtmew@aol.com
 Whidb = Whidbey Rock Clubs Dick Edwards 360-579-2807
 BELL = Bellingham Rock Club Brian Hughes 360-671-7330
 EVR = Everett Rock Club Brad Johnson 206-403-3073
 NID = North Idaho Diane Rose 208-667-8591
 Elb = Ellensburg Rock Dave Master (509) 925-3827
 WAMS = Wa Agate & Mineral Club.
 Boe = Boeing Rock club Erik Chilson 360-825-3138
 Swms = SWest WA Mineral Society Dave Roth 360-295-3567
 W Sea = West Seattle Rock Club Brian Waters 206-290-2312
 Always call the club rep to confirm all trip data. Some trips have fees to non club members, so they can be a day member and be covered under club insurance. The usual fee is \$.50 a day. Pow Wow requires membership \$3 each a year. WSMC 6100 Road trip rider fee is \$8 to help offset the \$65 vehicle access permit we must purchase. Some trips have no charge.

UPCOMING SHOWS: 2013

SEPT 21-22. S WA MINERAL SOCIETY. CASTLE ROCK FAIRGROUNDS. 120 FIRLANE ROAD, CASTLE ROCK WA

OCT 12-13: MARYSVILLE ROCK AND GEM CLUB. TOTEM MIDDLE SCHOOL CAFETERIA, 7TH STREET AND STATE AVE, MARYSVILLE WA
FIELD TRIPS: Mineral Council.

Powwow 9/7-8 Red Top 8 am W Fork Teanaway Camp .
 Geodes, agate, jade. Dig & light hard rock.
 Msvl 9/14 Little Naches 9 am 410& FR 19. Thunder eggs, rhyolite. Dig & light hard rock.

Msvl 10/19 Money Creek 9 am Hwy 2, Money Creek campground. Picture jasper. Rock hammer and container.
 Msvl 11/16 Blanchard Hill 9 am I-5 exit 240, gas mart. Stilpnomelane in quartz. Hard rock tools.

CHEMISTRY OR CRYSTAL SIZE

A look at what accounts for the distinctive bonding in malachite and rhodochrosite.

Few opaque gem materials are as well known as malachite. Its swirling and undulating patterns in concentric bands of light and dark green are wonderfully complex and attractive. These circular layer designs may be paper thin or quite thick. So describing the material as opaque is taking a bit of liberty; if cut thin enough, most and possibly all is actually translucent.

Beauty alone does not account for malachite's fame. The huge volume of gemmy material entering the market has popularized this stone. Malachite forms its lovely designs mammillary, stalactic, and, yes, stalagmitic growths. Cut horizontally, malachite reveals cyclic variations of light, medium, dark, and back to light green layers, deposited from copper-bearing waters.

Due to opacity, softness, and flamboyant patterns, malachite lends itself best to being shaped into rounded forms, especially cabochons, beads, eggs, bowls, boxes, and small carvings.

CARBONATES: Malachite is commonly referred to as a *basic* carbonate of copper. Rhodochrosite, even a more simpler, is just manganese carbonate with no hydroxyl. We are referring to its "ideal" composition, for few minerals ever approach being pure. Minerals such as malachite and rhodochrosite crystallize from water below ground, water that contains not only a lot of dissolved copper or manganese, but carries other metals in it as well, such as calcium, iron, and magnesium. Under certain circumstances, any or all of these other metals may substitute for some of the manganese in rhodochrosite, and these amounts may vary irregularly.

The most dramatic specimens are slices, sections cut across the vertical growths to show off the intriguing patterns of concentric rings. More interesting is if two or more large "fingers" of rhodochrosite have grown side by side or even coalesced.

Naturally these cross sections would not be as interesting or as beautiful if they were uniformly colored. Fortunately, like malachite, they commonly are banded in sharply defined layers. Rhodochrosite's bands range in color from rose red to various shades of pink to cream and near-white.

Siderite, an iron carbonate, occurs with the rhodochrosite in Argentina. Sometimes it forms very late in the growth history as a concentric outer layer in the finger-like growths. In other instances, it acts as a cementing material for breccia composed of angular rhodochrosite and siderite fragments.

WHAT CHANGED? There are two likely causes for the variations of color in concentrically banded minerals such as malachite and rhodochrosite: either changes in crystal size or changes in chemistry.

Malachite tends to show little variation in its composition. Other metals seldom substitute for copper in malachite. Having ruled out chemistry, we must explain the abrupt changes from dark, nearly black, to medium to light green in adjacent bands in malachite as due to the fact that the *individual crystals, though all microscopic, are nonetheless of different sizes.*

INTERNET ROCK SITES

1. www.orerockon.com - Pacific NW field trips, equip buy/sell, misc.
2. www.wrightsrockshop.com Has everything.
3. www.agateswithinclusions.com. The name sums it up.
4. www.geocities.com/Yosemite/Forest/2031/ . Terry's Oregon Rock Page has info on Oregon collecting.
5. Information on collecting in Eastern Oregon during the Madras Pow Wow: Write Eula Dillard, 145 E. 179th, Spanaway WA 98387 or call 253-847-2755.
6. www.wyodonor.org and www.thermopywy.net/bhbf for dinosaur excavation trips.
7. <http://mineral.galleries.com/minerals/byname.htm>
Part of Amethyst Galleries, Inc.'s web site, this is a listing of all the minerals in that company's (extremely extensive) database. More than a mere list, however, each entry is linked to its own page, giving info. such as the mineral's chemical composition, history, physical characteristics, and so on.
8. <http://www.goodearth.com/virtcave.html> The virtual cave site offers a directory of all caves in the US that are open to the public.
9. <http://www.luckystrickemine.com> Info from Prineville, OR rock dig site.
10. <http://www.the.gemshop.com>. The Gem Shop in Cedarburg, Wisconsin hold claims to central Oregon rock sites.
11. www.rockhounds.com This is a great site! Every aspect of rockhounding is addressed or it gives you a link.
12. www.stonetrails.com/ORlocs/ORlocs.htm Oregon rock sites Replace OR with WA...you'll get Washington sites.
13. <http://www.kinglseynorth.com>. **Buy grit in bulk.**
14. www.fs.fed.us/ - Fees and required permits for access to Federal lands.
15. General interest sites: www.rockhounds.com, www.fireagate.com, www.awesomegems.com
16. Be sure to go to our website (See top of Page 1). There are numerous links to other sites.
17. WEBSITES FOR DINO LOVERS
<http://dsc.discovery.com> Look for games and videos
<http://www.paleoportal.org>
<http://www.msnbc.msn.com> Look for technology and science.
<http://www.geo.ucalgary.ca>
<http://www.scienceschoolhouse.com>
18. <http://www.jescoproducts.com> **Buy grit in bulk**

OFFICIAL BLM REGULATIONS REGARDING COLLECTING:

You can collect a reasonable amount of rocks and minerals from BLM lands, but a permit or fee may be needed if you exceed certain amounts as described below. Note that the collecting limits for petrified wood are slightly different.

A REASONABLE DAILY COLLECTING AMOUNT

No BLM permit or fee required.

- fits in a car trunk or is a partial pickup truck load and,
- weighs less than 250 pounds

- and the material is not for commercial use.

(For petrified wood see below)

MORE THAN A REASONABLE DAILY AMOUNT

Requires a permit and fee from BLM.

- is a full pickup truck load or,
- involves more than one trip (or partial load) and,
- weighs more than 250 pounds
- or the material is for commercial use,
- or explosives or power equipment is used.

PETRIFIED WOOD:

Collecting petrified wood is free up to 25 pounds per day, plus one piece, but no more than 250 pounds per year. Pooling of quotas among two or more people to obtain pieces over 250 pounds is prohibited. A permit is needed for amounts over these limits.

AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES

CODE OF ETHICS

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.

I will keep informed on all laws, regulations and rules governing collection on private lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting materials in collection areas.

I will cause no willful damage to property of any kind, such as fences, signs, building, etc.

I will leave all gates as found.

I will build fires only in designated or safe places. I make sure they are completely extinguished before leaving the area.

I will discard no burning materials--matches, cigarettes, etc.

I will fill all excavation holes which may be dangerous to livestock.

I will not contaminate wells, creeks, or other water supplies.

I will cause no damage to collecting material and will take home only what I can reasonably use.

I will support the Rockhound Project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless or how found.

I will cooperate with Field Trip Leaders and those in designated authority in all collection areas.

WASHINGTON AGATE & MINERAL SOCIETY

WAMS meets the first Tuesday of each month, 7:00 p.m., at the First Baptist Church of Lacey, 4702 22nd (corner of College St. and 22nd)

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Printing & Mailing
M. J. Huetter 459-8121

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RETURN ADDRESS:

**WASHINGTON AGATE & MINERAL SOCIETY
P O BOX 2553
OLYMPIA WA 98507**

MINUTES AUGUST 6, 2013

Box score: **BIG CROWD – PICNIC!**

Submitted by Secretary M J Huetter.

PAINTING THE RUBY RED Lapidary Journal

March 1992

If rocks and minerals came in shades of black, white, and gray, there would be few minerals we would consider gems. Oh, we might value certain minerals such as quartz, tourmaline, or corundum for their industrial properties, but in a world where color is often a criterion for beauty--the leaves of fall, fashions of spring, or a friend's eyes--we would almost certainly not treasure rocks and minerals for their beauty. For without color, a gemstone, with the notable exception of diamond, is just another "rock".

For nature to paint the ruby red, an extraordinary set of coincidences must take place. Many gems and mineral fans can recite the fact that chromium is the coloring agent for ruby, or some other element accounts for the hue of another gem, but that is just scratching the surface. What do we mean by "agent" or "accounts for"--just how does chromium give ruby its prized red? And more puzzling still, how does chromium make a ruby look red but an emerald look green?

Those are big questions and we don't pretend to try to answer them fully here, but we will probe a little deeper and examine not merely the chemical element, such as chromium, but the particles that make up the atoms of those elements and how they interact. For us to see colored stones, the right atoms of the right elements must be in the right places in the right amounts. And on top of that, these minute bits of matter must all be coordinated with the mercurial nature of light. For without light, gemstones, no matter how perfect their atomic recipe, would have no color.

MAIL TO: