

GEM SCOOPS



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Pendleton District Gem and Mineral Society

January 2013

Where Rocks Come From

President's Message

Welcome to 2013 in the PDGMS! Get ready for a busy slate in the club. I am very excited to be the incoming president and profusely thank you all for your previous work.

First, our planned events in the immediate future are as follows. Professor Scott Brame will speak on the local geology of the area in a talk entitled "Right Beneath your Feet: An Overview of the Geology of the UpState of South Carolina" on Tuesday, January 15th at 7:00 PM at the Hayden Conference Center in the Botanical Gardens on the Clemson University Campus. All are welcome to attend. Also planned in the coming months are (1) a salt casting workshop hosted by Ted Wallenius, (2) a kaleidoscope construction foray with John Ishler, (3) a talk from Patrick McMillian, and (4) a gold panning/finding excursion. The latter two events are somewhat tentative; timing on all of these activities will be announced soon.

Second, as we move into the new year, it is a good time to reflect on our club's priorities. Towards this, I would like for all of us to think about building club membership and actively solicit new members. There are a lot more rock hounds out there than we are reaching. Please drag a friend to our monthly meetings. Reduced or free memberships to entice newcomers is a proactive idea -

FEBRUARY 2013 MEETING
The February meeting will be held on February 19, 2013.

DECEMBER MEETING

WHEN: January 15, 2013, 7:00 p.m.

WHERE: Hayden Conference Center in the Clemson Gardens on the Clemson Campus.

PROGRAM: RIGHT BENEATH YOUR FEET—AN OVERVIEW OF THE GEOLOGY OF UPSTATE S. C.

Did you know the Blue Ridge Mountains are the third set of mountains to be pushed up by the movement of tectonic plates over the last billion years? Scott Brame, Assistant Professor of Earth Sciences at Clemson University, will talk about these past events and how they have resulted in the geologic settings we see today. Refreshments served by Dorris Sias at 7:00 p.m. Visitors are always welcome. For up-to-date information, visit our website at pdgms.org

-- other suggestions are welcome.

Third, let's get active with digs. Recently, we've had fun finding fossil sand dollars at Perry, Georgia, quartz crystal hunting at Diamond Hill, South Carolina, and traipsing the shores of Lake Keowee. The specimens pulled from Diamond Hill were truly stunning (see the November 2012 Newsletter). Let's shoot for more of these types of activities, ideally balanced between gem, mineral, and fossil hunting! Suggested digs are welcome (rest assured we'll hit Graves Mountain soon). There is also the February National rock show in Tuscon, AZ for you specimen collectors with a fat wallet; additional local shows are upcoming.

Happy 2013,
Robert

Editor's Spot

The PDGMS is now fifty years old. I think I have been editor of the *Gem Scoops* for more than a quarter of that time. Now, can I ask for some help?

Articles relative to our craft or hobby are always welcome from our membership. I would like to publish a report on each field trip. Do you have a special skill? Please write about it and I will fix your article up for the newsletter. Happy New Year,

Fred

2013 Officers

President: Robert Lund 864-888-8719
V.P. : John Palmer 941-545-3713
Secretary: Rebecca Rogers 864-639-6339
Treasurer: John Ishler 864-885-9126

2013 Directors

Larry Boller 864-296-8077
Jim Duzenberry 864-654-5741
Fred Sias 864-654-6833
Ted Wallenius 864-882-3940

DMC FIELD TRIPS

January 26, 2013: Tignal, GA. Jackson Crossroads Amethyst Mine (Fee Site) from 9:00 AM to 5:00 PM. Sponsored by the Jacksonville Gem & Mineral Society. No children under 12. Official Field Trips of the Field Trip Committee are open to all members of clubs associated with the DMC program of the SFMS Field Trip Committee and to all members of SFMS clubs/societies who provide their membership with SFMS liability insurance. Because of insurance requirements, members of the general public are NOT invited to these or any DMC program field trips.

UPCOMING SHOWS

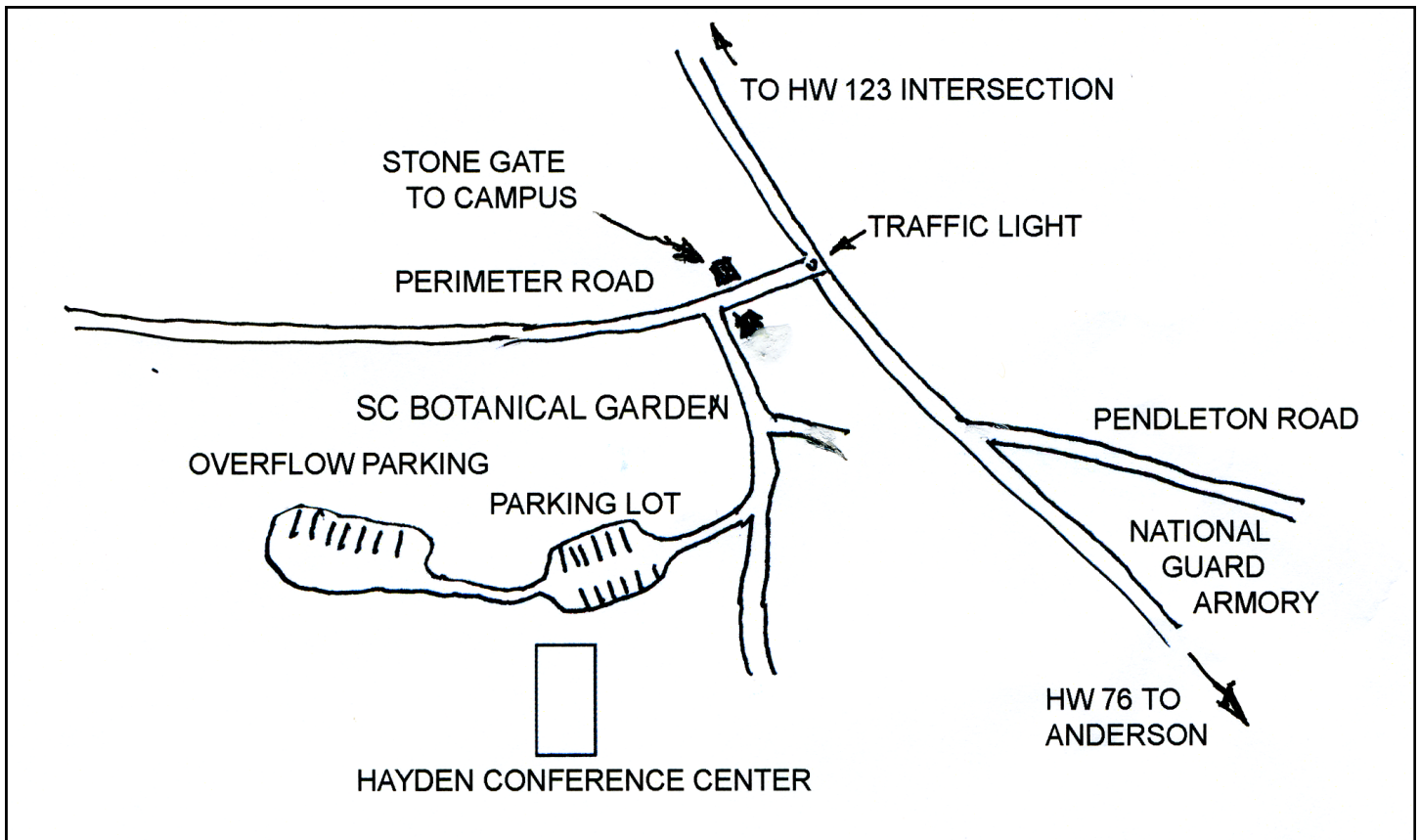
February 8-10, 2013: Cocoa, FL. Central Brevard Rock & Gem Club. 36th Annual Symphony of Gemstones show and sale, Space Coast Convention Center (Holiday Inn Express); 301 Tucker Lane., Exit 201 west, I-95 at Hwy. 520. Hours: Fri. 12-6, Sat.& Sun. 10-5. Admission: adults \$4 (discount coupon on Website), children (12 and under) free. Hand-crafted and fine jewelry, rough and cut gems, fossils, minerals, beads, slabs, cabs, equipment and tools. Website: www.centralbrevardgems.org

February 23, 2013: Lakeland, FL. Imperial Bone Valley Gem, Mineral and Fossil Society. Location: 175 Lake Hollingsworth Dr., Lakeland, FL. 33801. Hours: Saturday 9:00am - 4:00pm. Admission: Adults \$3.00, Children and Teachers Free. Hourly Door Prizes, Spin & Win Game, Kids Treasure Dig, Demonstrations and Educational Displays. Website: www.bonevalley.net

March 1-3, 2013: St. Petersburg, FL. The Suncoast Gem & Mineral Society. 43rd Annual Gem, Jewelry & Mineral Show and Sale, The Minnreg Building, 6340 126th Ave. N., Largo, FL 33773. Hours: Fri: 10-6; Sat: 10-6; & Sun: 10-5. Hourly Door Prizes, \$1.50 Grab Bags, Free Parking, demonstration exhibits on Beading, Wire Wrapping, Cabbing, Faceting, & Metal Work plus Club display cases and exhibits. Website www.sgams.com

March 8-10, 2013: Augusta, GA. Co-sponsored by the Aiken Gem, Mineral, & Fossil Society and the Augusta Gem & Mineral Society. The 25th Annual Aiken -Augusta Gem, Mineral & Fossil Show, Julian Smith Casino, 2200 Broad Street, Augusta. Hours: Fri & Sat 10-7, Sun 10-4. Admission: \$3 for adults, children under 16 free with paying adult.

How to get to our club meeting in the Hayden Conference Center:



2013 SFMS WORKSHOP CLASS SCHEDULE

Workshop Staff

Wildacres Director

Lisa Roberts
 10328 Briar Bay Loop
 Johnesboro, GA 30238
 423-494-7096 678-479-4177
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Education Committee Chair

Roy Deere
 7041 Rodes Place
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 321-725-9179
 Email: SFMSeducationdir@gmail.com

SESSION ONE - WILLIAM HOLLAND SUNDAY, June 9-14, 2013

Seed Beading	Barbara Green
Cabochons	Anita Westlake
Chain	Case leaser
Polymer Clay	Carolyn Stearn
Enameling/Cold Connection	Renee Kelley
Faceting	Bill Roberts
Lampwork beadmaking	Ann Royer
Mineral ID/Field trips	Scott Forward
Opal cutting	Joe DePietro
Photography	Ron Gibbs
Silversmithing/ Special	Annette Gibney
Wirecraft I	Sandra Bergquist
Tool Making	TBA

SESSION TWO - WILDACRES

Monday Aug 19-25, 2013

- Class Offering data are not yet available -

SESSION THREE - WILDACRES

Monday Sept 23-29, 2013

- Class Offering data are not yet available -

SESSION Four - WILLIAM HOLLAND

SUNDAY, Oct 13-18, 2013

Seed Beading	Ronald Midkiff
Cabochon II	Ellis Bray
Casting	Joe DePietro/ Lou Mager
Mixed Metals	Kim St Jean
Fused Glass	Rich and Linda Dillon
Lampwork beads	Cindy Reed
Silver 1`	Rebecca McNairy
Silver Filigree	Shannon Stafford
Wirecraft 1	TBA
Wirecraft 2	TBA

Geologic Origins of Snakeskin Agates at Rome, Oregon

Philip S. Neuhoff, Ph.D.

The curious silica nodules known as snakeskin agates that are found near Rome, Oregon have long been a favorite of rockhounds. These translucent white agates with reticulated, opaque white surfaces are readily found in certain layers of sediment south of Rome. While lacking color patterns and other features typically appreciated by agate aficionados, they will take a good polish and make interesting additions to any collection. Their origins are perhaps even more interesting.

The snakeskin agates are found in a group of Miocene (5.3 - 23 million years old) sedimentary beds commonly known as the "Rome Beds". The Rome Beds consist of a 100 m thick series of alluvial (stream or river deposited) and lacustrine (lake bed) sediments ranging from coarse-grained conglomerates through fine-grained mud-stones and volcanic tuffs. The sediments in these beds contain abundant volcanic-derived material that served as a main source for elements in the minerals found there. The beds are relatively flat-lying and rest on top of an erosional boundary that separates them from the underlying (older) Miocene sediments and volcanic rocks and are themselves overlain by younger volcanics and sediments.

The Rome beds have long been the focus of exploration for saleable mineral commodities. Significant dimension stone was quarried from these beds prior to 1960, but further utilization of this resource is unlikely due to the presence of erionite in the dimension stone (see note at end of article). The beds have been explored extensively for zeolites. These hydrous aluminosilicate minerals have a wide range of uses as desiccants, feed supplements, and water treatment substrates among others. To date, only a small tonnage of ore bearing the zeolite mordenite has been mined, again largely due to the presence of erionite (also a zeolite). Other zeolites occurring in the deposit include chabazite, phillipsite, and clinoptilolite. The zeolites and other constituents (clays, quartz, feldspars, mica, calcite, fluorite) of the finer-grained Rome Beds are all microscopic and not of interest to mineral collectors.

The formation of zeolites and other secondary minerals in the Rome Beds resulted from interaction between the volcanic sediments and groundwaters. The minerals found in the Rome Beds (including the snakeskin agates) are indicative of alteration of volcanic sediments in a very saline lake setting. Saline lakes (for instance the Great Salt Lake) form in closed basins in which surface waters feed into the lake but not out of the lake. Evaporation causes the dissolved mineral content of waters in the lake (and the groundwaters underneath the lake) to increase. When these

very saline waters encounter volcanic sediments (which tend to react vigorously), sequences of minerals are formed reflecting changes from relatively fresh water near the margins of the lake to very saline waters at its center. This is seen at Rome where the margins of the lake are relatively unaltered, the center of the lake shows extensive formation of potassium feldspars, and in between form the zeolite beds that have been the focus of mineral exploration.

A common feature of saline lake systems with volcanic sediments is the precipitation of hydrous sodium silicate minerals. These minerals are generally not very stable and are usually only found in active saline lake systems (not fossil systems such as the Rome Beds). Among the most common of these is magadiite [$\text{NaSi}_7\text{O}_{13}(\text{OH})_3 \cdot 4(\text{H}_2\text{O})$], named for the active saline Lake Magadi in Kenya where it was first found. Even within active lake systems, magadiite tends to break down, losing water and sodium and converting into relatively pure silica (SiO_2). The resulting silica often retains to form of the pre-existing magadiite nodules, being globular and having morphologies reflecting the desiccation and shrinking of the nodules such as interior cracks and a reticulated surface texture. These nodules are referred to in the geologic literature as "Magadi-type chert" as they tend to have a chert-like texture in Lake Magadi. Most Magadi-type chert I have seen is like this. The one exception are (sic) the snakeskin agates from Rome, which are clearly formed from desiccation of magadiite but are more agate-like in their texture. The presence of Magadi-type chert at Rome is further evidence of its past as a saline lake system.

A Note About Erionite: Many of the beds at Rome contain the zeolite mineral erionite [$(\text{Na}_2, \text{K}_2, \text{Ca})_2\text{Al}_4\text{Si}_{14}\text{O}_{36} \cdot 15\text{H}_2\text{O}$] at concentrations ranging from trace amounts to 100%. Erionite is a naturally-occurring fibrous zeolite mineral with no known uses. Numerous studies now point to erionite being a particularly carcinogenic mineral, being implicated in mesothelioma in a number of places (see article in October, 2011 Grindings). Health concerns associated with this mineral are similar to those posed by blue asbestos (perhaps I will write a future article on asbestos mineralogy...not all asbestos is carcinogenic). The beds containing the snakeskin agates are generally low in erionite, but unnecessary suspension of dust during collecting activities is not advised. Those concerned may consider bringing a dust mask to avoid breathing erionite particles that may be stirred up while collecting.

EDITOR'S NOTE: This article can be found at www.idahogemclub.com/news/2012/June12.pdf