



2013 WYOMING STATE MINERAL AND GEM SHOW JUNE 15-16 RIVERTON, WY

Article submitted by: Star Strike

The WSMGS Board would like to thank the Riverton Mineral and Gem Society for hosting the 2013 WSMGS State Show and the Annual WSMGS Membership Meeting. We would like to complement your members on a quality show:

- Advertising grant & community support resulted in a large attendance (c.1,500)
- Signage at entrance and at various activities was professionally done
- Door prizes given periodically throughout Show
- Raffle items were of high quality
- Silent auction was well organized with varied materials
- "Rock Wheel of Fortune" game of chance allowed everyone to win
- Three different activities for children of various ages
- Club Showcases were grouped together
- Dealer/Professional, Amateur, and Educational Display Cases
- Host club members easily identified, friendly and helpful
- Dealers (17) were well spaced with spacious aisles for the public
- Rock Identification Station
- Ultra-Violet Rock Display
- Pot-luck Dinner provided for delegates, officers, dealers, & members
- Educational speakers scheduled during show

SHOWCASE RESULTS

A. CLUB-PEOPLES CHOICE AWARD: Riverton Rock Club

B. Dealer/Professional:

1st-Will Guthrie 2nd-Linda Richendifer

C. Amateur:

1st-Richard Heumier 2nd-Nancy Rickard 3rd-Cary Arner

D. Educational:

1st-Glen Laidlaw 2nd-Heumier Family 3rd-Linda Richendifer

WSMGS STATE ROCKHOUND OF THE YEAR

Richard Heumier was selected as the 2013 WSMGS State Rockhound of the Year. Richard has been a member of a rock club since he was nine years old and presently belongs to several other clubs in Wyoming. He has served as the WSMGS Historian and as a WSMGS Board member for the past four years. Richard helped to establish the Heumier Museum in Torrington by documenting, labeling and displaying his families' rock collection.

Continued at the top of Page 14

Wyoming State Mineral & Gem Society (WSMGS) STATE OFFICERS

President: Stan Strike

2132 Gail Lane-Cody, 82414

Phone: 307-250-1244

Vice President: George Tillman

9075 N Mohican Road, Casper, 82601-7457

Phone: 970-405-5502

Secretary: Mary Ann Northrup

736 Lane 13-Powell, 82435

Phone: 307-754-4472

Treasurer: Jim McGarvey

P.O. Box 116-Kinney, 82516

Phone: 307-856-6188



Richard Heumier: Historian

88 Triangle Ranch Road-Riverton, 82501

Phone: 307-851-1946

Verne Orcutt: Jade State News Editor

P.O. Box 697-Cody, 82414

Phone: 307-578-7091

Jim McGarvey: RMFMS State Director

P.O. Box 116-Kinney, 82516

Phone: 307-856-6188

WSMGS Webmaster

Marlene Sibley

Wyoming WSMGS Affiliated Rock Clubs

Cheyenne Mineral & Gem Society:

P.O. Box 21412- Cheyenne, WY 82001

President-Bob King-2857 Olive Dr.

Cheyenne, WY 82001 (307-632-2702)

Contacts: Bob King

Carroll Schnell

Cody 59ers Rock Club:

Stan Strike-2132 Gail Lane

Cody, WY 82414 (250-1244)

President-Jim Ulmer-P.O. Box 3003

Cody, WY 82414 (307-272-5330)

Contacts: Jenny Schneider

Beth Spears

Natrona County Rockhounds:

P.O. Box 123-Mills, WY 82644

President-George Tillman (970-405-5502)

Contacts: Helen Hoff

Jennifer Flowers

Rex Young Rock Club:

Ron Harroun-Box 373-Lingle, WY 82223

President- Kim Nielsen-50434 Leisure Lane

Scottsbluff, NE 69361(308-632-2385)

Contacts: Kim Nielsen

Joyce Trowbridge

Riverton Mineral & Gem Society:

P.O. Box 1904-Riverton, WY 82501

President-Linda Richendifer-10709 Hwy 26

Kinney, WY 82516 (307-856-1532)

Contacts: Linda Richendifer

Alice Gustin

Shoshone Rock Club:

P.O. Box 256-Powell, WY 82435

President- Mary Ann Northrup-736 Lane 13

Powell, WY 82435 (307-754-4472)

Contacts: Linna Beebe

Jane Neale

WSMGS INFORMATION AND UPDATES

by Stan Strike, President



1. The Annual WSMGS Membership Meeting was held on Friday, June 14, 2013. Included in this edition of the Jade State Newsletter are the Secretarial Minutes and the Annual Treasurer's Financial Report. At this meeting all of the WSMGS Affiliated Clubs were represented by delegates. The following major business was completed:

- Unanimous approval of the WSMGS Articles of Incorporation and WSMGS By-Laws as updated and rewritten by the WSMGS Board. This was necessary in order to include the verbiage required to qualify for a 501(c)3 classification with the United States Internal Revenue Service.

- The election of WSMGS Officers:

President — Stan Strike Vice President — George Tillman
Secretary — Mary Ann Northrup Treasurer — Jim McGarvey
Historian — Richard Heumier JSN Editor — Verne Orcutt

- Awards from The Rocky Mountain Federation of Mineralogical Societies:

Jim McGarvey-RMFMS Gold Pan Service Award
Verne Orcutt- 1st Place-New Newsletter Editor
Marlene Sibley- Honorable Mention-WSMGS Website
Lynn & Jane Neale-AFMS Rockhounds of the Month

- Awards from Wyoming State Mineral & Gem Society :

Richard Heumier-WY State Rockhound of the Year
Jane Neale-WSMGS Service Award
Mary Ann Northrup-WSMGS Service Award

- Discussion of sponsoring the RMFMS Convention/Rock show in 2015 or 2016

2. The WSMGS Board submitted the restated and rewritten WSMGS Articles of Incorporation (that were approved at the June meeting) to the Wyoming Secretary Of State for approval. Our Articles were approved by the State on June 27, 2013.

3. The WSMGS completed our 501 (c) 3 application and mailed it July 24, 2013. The Federal Internal Revenue Service received the application July 26, 2013. With the approval by the IRS, WSMGS will be able to apply for grants to supplement the annual state show and to increase our educational programs and charitable giving. A special "Thank You" to Tina Kintzler (228-365-0925), a very competent Riverton accountant who provided her services free of charge.

4. Hopefully your rock club is taking several field trips this summer and fall. After all, most members joined your club for the "Thrill of the Hunting" and to associate with other persons who have like interests.

5. The WSMGS Board has accepted a bid from the Natrona County Rockhounds Club for the 2014 WSMGS State Show. Mark your calendars for July 12-13, 2014.

2013 WSMGS MEMBERSHIP MEETING MINUTES

Wyoming State Mineral and Gem Society

Fremont Center, Riverton, Wyoming

June 14, 2013, 7 P.M.

President, Stan Strike opening the meeting.

Minutes of the 2012 Annual WSMGS Membership Meeting were read and approved as read by the Secretary, Mary Ann Northrup.

Treasurer, Jane Neale, was unable to attend due to illness. Richard Heumier, Historian gave the Treasurer's report. Total expenses were \$1139.17, money from club dues \$359.00, total income \$445.29. Bank balance and checkbook balance \$1531.53.

Historian, Richard Heumier, reported he has been collecting the history of the Wyoming rock clubs. He has made up booklets of information and guidelines for setting up the WSMGS State Rock Show -one for the future show club and one for the state board. The comment was that it was very useful.

Jade State News Editor, Verne Orcutt, talked about the set up of the News and the need for pictures, trade or sell items and rock related articles.

RMFMS State Director, Jim McGarvey, Director of Public Lands Association needs information on 4wheelers laws, does national news letter for gold prospectors, Rocky Mountain Mineralogical Society. He gives out information to all mentioned.

Stan Strike and Jim McGarvey went to the Rocky Mountain Federation show in Sandy, Utah.

Marlene Sibley, webmaster for the Wyoming State Mineral and Gem Society, received an Honorable Mention out of 12 states and 100 web sites. Lynn and Jane Neale were selected as AMFS Rockhounds of the month. Verne Orcutt was awarded a certificate of appreciation, and a blue ribbon as a New Editor for the Jade State News. Jim McGarvey was presented a Service Award plaque as Director of the Rocky Mountain Federation, only one given out of the 12 states.

Old Business-

There is a problem with digitizing the Logo which is free drawn. An artist offered some ideas on the theme. Stan moved the Board has leeway to digitize the Logo, Mary Vogel seconded, motion carried.

Stan gave reasons for the clubs advantages to have the 501c3.

Richard gave an example of what the 501c3 would do for the clubs which are all under an umbrella of the state board by having the 501c3.

Richard gave a report on the 2014 state show and Cheyenne turned him down. Casper said no finances are the problem. So no one has bid for the next show.

Torrington, Rex Young Club still has extra show cases and Kim Nielsen said they will keep them for a while.

Jim McGarvey showed his business card and on the back is an article about rocks to promote rock clubs.

New Business-

To follow Federation rules an amendment that each club have a rockhound of the year and then this person can go onto state and Federation contests. George Tillman moved to adopt the amended and restated By-Laws, Holly Skinner seconded, an unanimous vote was cast. George Tillman moved the articles of Incorporation to be ratified as published, Mary Vogel seconded the motion ;and an unanimous vote was cast.

Officers elected for the next two years are- President-Stan Strike, Vice President,- George Tillman, Secretary-Mary Ann Northrup, Treasurer-Jim McGarvey, Historian- Richard Heumier. and Verne Orcutt as Jade State News editor.

The Rocky Mountain Federation President asked for Wyoming to have as show in 2015 or 2016.

Mel Gustin Moved we Adjourn, George Tillman seconded, motion carried.

Note: These minutes are subject to additions, corrections, and approval at the 2014 Annual WSMGS Membership Meeting. (Mary Ann Northrup, Secretary)

2013 WSMGS FINANCIAL REPORT

Wyoming State Mineral & Gem Society
Financial Report June 9, 2012- June 7, 2013

Beginning Balance \$ 1891.41

Expenses:

Office Supplies	\$ 63.77
Corporation Fee	25.00
Website	40.00
RMFMS Dues & Ins.	15.05
RMFMS Rep.- fuel & Accom.	304.09
Victory Trailer Plates	57.54
Donations	25.00
Jade State News	172.13
R.O.Y. Award Labor	100.00
R.O.Y. Sterling Silver	64.00
Gifts & Awards	61.40
St. Show Dinner	151.19
St. Bd. Traveling Expenses	<u>60.00</u>
Total Expenses	1139.17

Income:

Club Dues-	
Cheyenne M & G S	80.00
Cody 59ers	65.00
Natrona Co.	50.00
Riverton M & G S	102.00
Rex Young	24.00
Shoshone R C	<u>38.00</u>
	359.00

Interest Income	0.61
Riverton Donation to JSN	100.00
Kappa Kraft Fair Sales	70.68
Donation for State Dinner	38.00
Rex Young St. Show proceeds	<u>236.00</u>
Total Income	445.29

Beginning Balance	1891.41	
Income	<u>804.29</u>	
	2695.70	
Expenses	<u>- 1139.17</u>	
	1556.53	
Outstanding Ck. # 207	<u>- 25.00</u>	
	1531.53	= Bank Balance & Checkbook Balance

Jane Neale, Treas.

Hello fellow Rockologists,

Since the last State show, I pulled the State trailer to Torrington. A day or so after, I removed the State Triceratops Dinosaur, assembled it, painted it another coat, disassembled it, and put it back on board the trailer for the next show. Two weeks later, I pulled the trailer to Riverton and gave it to Linda Richendiffer (Riverton M&GS President), for safekeeping until their State show on June 15th & 16th, 2013. It will be at the Armory building on the Fairgrounds in Riverton. Congratulations Riverton, on having your 75th Anniversary as a Club and for having the State rock show.

In January through February, I gave a one hour, once a week class for various age groups of kids to the Valley Christian School. The age groups were: kindergarten and 1st grade, 2nd & 3rd grades, and 4th & 5th grades. They got to see the Heumier Family Museum, had a class on safety for hunting rocks, and the 2nd through 5th grades had a class in basic geology. Everyone seemed thrilled, including the teachers & principal, as I was asked to do a rock trip in May. On a cloudy, windy day in May, the kids went afield to the Guernsey State Park for a successful 2 hour rock hunt to find quartz crystals, jasper, banded hematite, and one petrified snail was found.

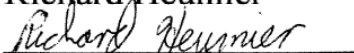
On May 18th & 19th, Cheyenne M&GS had their 13th annual rock show. It was held at a new location, the Archer Complex at Exit 370 on I-80, 6 miles east of Cheyenne. They had a larger than average attendance than on previous years. Way to go Bob King & the Cheyenne club. The State Board is in high hopes that the Cheyenne club will host the 2014 State show.

A mention to everyone, that Jane Neale, our State Treasurer, had a stroke about one & half months ago. She is gaining every day, according to her husband, Lynn.

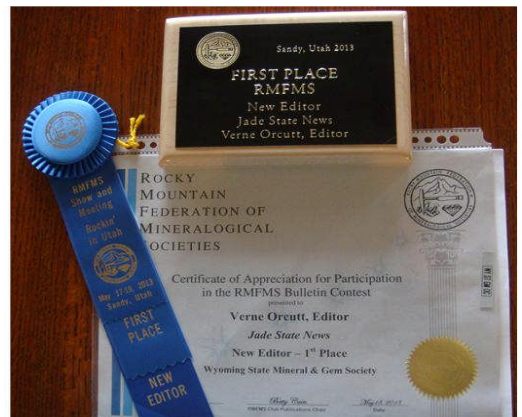
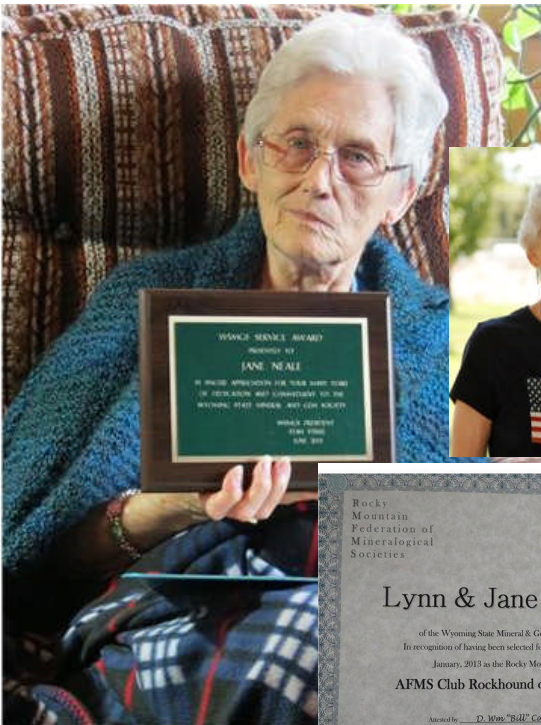
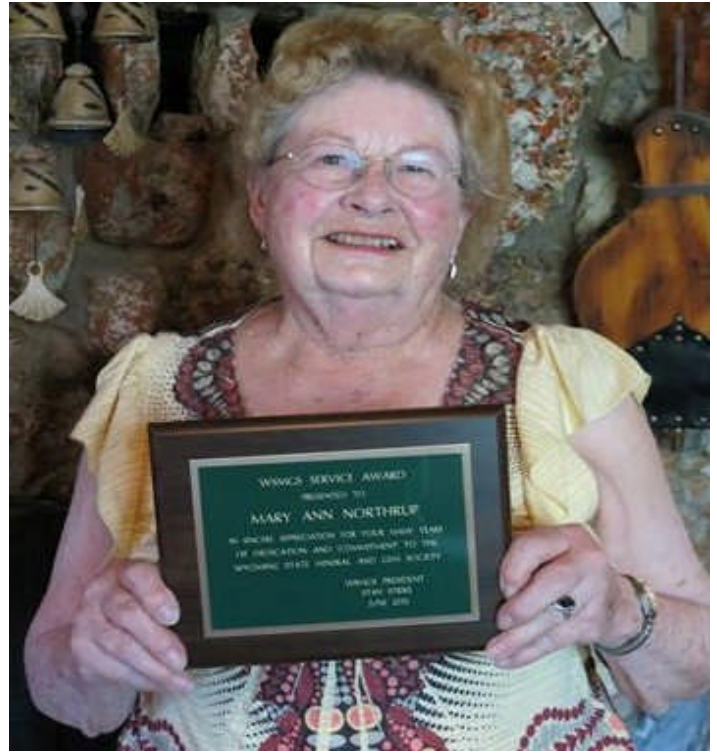
The State Board has been working on getting a tax 501 (c) 3 status ID number. This will benefit all of the member clubs by getting larger donations, because the donors can deduct these donations from their taxes with this number. The State delegates meeting will be voting on changes in our State By-laws & our Articles of Incorporation. If passed, they will help meet the criteria set by the IRS. There are 26 pages of forms for this application. Busy times for all that are involved.

I just received an extensive **third edition** to the History of the Cody 59ers Rock Club. It dates from January, 1994 to January, 2014. from the editor & club historian, Jackie Platt. Excellent piece of work Jackie.

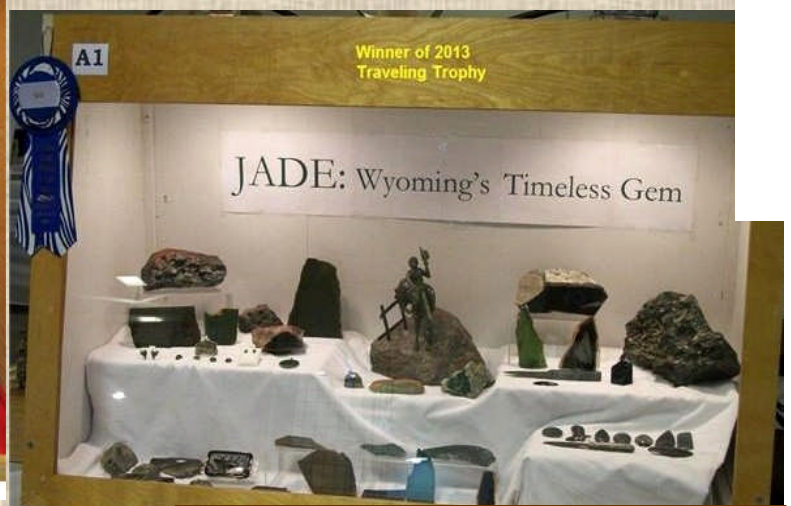
The State Board elections are to be held this year at the delegates meeting on Friday evening, starting at 7:00 pm, June 14, 2013 in the Armory building. All board members are willing to resume their offices, if so elected, except for the Treasurers office.

State Historian
Richard Heumier


AWARD RECIPIENTS



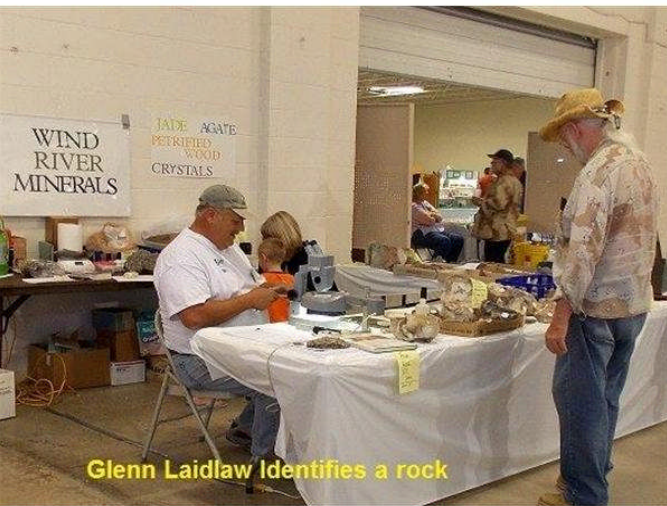
2013 WYOMING STATE MINERAL AND GEM SHOW CASE EXHIBITS



WINNER OF 2013 TRAVELING TROPHY



VENDORS



Glenn Laidlaw Identifies a rock





NEWLY ELECTED BOARD OF DIRECTORS

Club Activities



MEMBERSHIP



RIVERTON SWEETWATER AGATE FIELD TRIP MAY 4TH

We left Riverton in the rain. Along the way, we picked up some rock hounds at Sweetwater Station and some more at the turn off to the Agate Beds. In all, we had around 23 rock hounds, and no more rain.

The agate beds were dry but it was a fairly cool day; nice for the people who wanted to dig. And no, I wasn't the only one digging. Finally got some converts.

At the end of the day, everyone had a great day and nice selection of agates. It was nice to finally get out and do some rock hunting.

Linda Richendifer, Trip Leader

Richard Heumier, the WSMGS Historian, conducted a Basic Geology and Rock Hunting class as part of the Torrington Library's summer reading classes. Each class was 1 1/2 hours long with 72 children (ages 5-15) and 48 adults attending.

Richard provides his "students" verbal information and visual exhibits.



Cody Summer School Students' Geology Field Trip

Stan Strike, WSMGS President, conducted a Geology Field Trip for the Cody 5th grade school students. The students were introduced to the concepts of rock sequences and geologic time using a stratigraphic column. They also learned about rock structures such as anticlines, synclines, and faults viewing geologic maps. In the field, safety was stressed with the use of safety glasses and the proper use of rock hammers, being careful and considerate around others, and to watch out for rattlesnakes and bears! Students were able to fill their backpacks, pockets and sacs with rocks they collected along the way up the North Fork Shoshone River.



Students searching river gravels for petrified wood.

Students searching Shoshone Canyon "dump" piles for variety of rocks and minerals



Article courtesy of Stan Strike

**WYOMING ROCK STARS
AVA AND EDDY COLE**



In 1981

Eddy Cole was employed as a professional geologist and doing work in

Montana and discovered the fossilized remains of a dinosaur in the Judith River Formation. It was identified by Dr. Peter Dodson and named after Eddy's wife Ava-*.Avaceratops lammersi*. Ava's dinosaur was reconstructed and determined to be a small dinosaur (ceratopsian) with one short nose horn and a short bony neck frill. It was eight feet long and lived about 75 million years ago during the Upper Cretaceous geologic time period. Avaceratops were the rhinoceroses of their day: horned 4-legged plant-eaters with huge heads, bulky bodies, hoof like feet, parrot like beak, rows of shearing cheek teeth, and powerful jaws. It is on display at The Academy of Natural Sciences-19th Street and the Parkway-Philadelphia, Pennsylvania.

*Source Information: Dinosaur Data Book by David Lambert, The Academy of Natural Sciences-Philadelphia, and

Eddy Cole also is credited with the discovery of a new species of Arthropod-*Ecnomocaris spinosa*, which he collected in the upper Wheeler Formation within the House Range in Utah. It has a seven centimeter elongated body covered by an exoskeleton with long spines which extend its total length to 18centimeters. It is thought to have had walking legs and lived on the sea floor using its spines as sensory and defensive tools.

*Source Information: "Soft-bodied Animals/Algae of the Middle Cambrian of Utah and British Columbia" by S.C. Morris & R.A. Robison from the Paleontological Contributions Series-The University of Kansas.

Ava and Eddie Cole own Ava's Silver Rock shop located in Thermopolis, Wyoming at 631 Shoshoni Street (next to McDonalds). They recently built a new Rock shop at the same location which required demolition of the old shop first. You will find many Wyoming rocks, minerals, and fossils for sale that were collected by the Coles. Especially impressive is the large boulders of Apple- Green Jade in front of the Rock shop. They also have developed a booklet: "10 Great Wyoming Collecting Areas" and is available for \$5.00. The booklet describes new locations certified by the Coles with complete travel directions and what may be collected there.

Ava's Silver
631 Shoshoni Street
Thermopolis, WY 82443
Jewelry, Antiques, Gifts, Rocks, Fossils
Ava Cole
307-864-3800

The Wyoming Rock Shop
Eddy Cole
Consulting Geologist
the_wyoming_rock_shop@msn.com
678 371 5561

WSMGS WEBSITE STATISTICS REPORT

www.wymineralandgemsociety.org

WSMGS State Rockhound of the Year Continued:

Richard provides educational programs for school age children in his community and displays at several Wyoming rock shows. He is always willing to lend a helping hand and volunteers for projects to promote the WSMGS such as building a model dinosaur to being Night Guard at the State Shows. Richard leads by example and educates other rockhounds.

There were two other nominations for this award that should also be recognized for their contributions to the WSMGS: Jim McGarvey and Linna Beebe. Jim has served on the WSMGS Board for over 15 years and is presently serving as the RMFMS State Director and WSMGS Treasurer. Linna has served the Shoshone Rock Club by being a Board member and officer for many years. She is the club's Jade State News Reporter and has provided Club News and History Reports to WSMGS. Linna works with rocks and lapidary almost daily because she and her husband own Stoneage Industries in Powell.

WSMGS SERVICE AWARDS

The WSMGS presented Service Awards to Jane Neale for serving as WSMGS Treasurer for four years and to Mary Ann Northrup as WSMGS Secretary for 15 years.

Award recipients are featured in a photo array on page 7

Big Ben Watch Toss

Three visitors to London climb up the tower that houses Big Ben and decide to have a contest. They're going to throw their watches off the top, run down the stairs and try to catch the watches before they hit the ground.

The first tourist throws his watch, takes three steps and hears his watch crash. The second throws his watch and takes only two steps when he hears his watch shatter.

The third tosses his watch off the tower, jogs down the stairs, goes to a candy store, buys a snack, walks back to Big Ben and catches his watch. "How did you do that?" asks one of his friends.

"My watch is 30 minutes slow."

Author: Anonymous

The Wyoming State Mineral and Gem Society website was recognized at the Rocky Mountain Federation of Mineralogical Societies Convention in Sandy Utah (5/18/2013) with an Honorable Mention. Competing against club websites within the other 12 states that make up the RMFMS, our WSMGS website did very well considering we received only minor deducts in judging that can be easily fixed and the judges really, really liked our unique informative format. A special thanks to our Webmaster-Marlene Sibley-who has donated many hours creating this website and updating it.

If you have not taken time to view the website yet, please do so soon. It contains information that should interest every Wyoming rockhound. If you would like a member of the WSMGS will present a program for your club-"Introduction to the WSMGS Website".

The following statistics indicate that our site is being discovered as its usage continues to grow every month. For June and July 2013, 92% of our Web Visitors came from the United States, 4% Germany, Canada 3%, and with Estonia and Poland less than 1% each. During months prior to these. we were frequently visited by Chinese rockhounds. Direct web traffic using our web address accounted for 28% of the visits, with 34% from other websites that are linked to our website, and 38% of the visits resulting from the use of search engines such as Google, Bing, and Yahoo. For July 2013, our visitors used up 74% of our monthly traffic quota (load capacity total= 1024MB). Our website as presently written requires 29.83MB of the total of 100MB of memory that is provided by our web provider-Doteasy Technology Inc. for \$25/year.

Month	Summary by Month									
	Daily Avg					Monthly Total				
	Vis	Pages	Visits	Pages	Visits	Pages	Visits	Pages	Visits	
Aug 2013	401	323	96	38	264	216253	394	966	3217	4016
Jul 2013	504	344	92	43	887	1049422	1336	2882	10798	15613
Jun 2013	676	369	77	41	617	969557	1230	2314	11077	20300
May 2013	424	278	54	30	682	590731	813	1703	8618	13146
Apr 2013	304	199	48	24	322	371881	736	1396	5993	9136
Mar 2013	260	151	40	22	392	1012623	699	1254	4716	8968
Feb 2013	218	141	22	11	309	487101	315	620	3938	6671
Jan 2013	123	65	10	6	349	838712	260	334	2042	3834
Dec 2012	133	88	8	5	383	1139467	243	308	2736	4772
Nov 2012	50	37	5	3	240	370360	160	177	1114	1334
Oct 2012	38	23	5	4	202	343134	154	167	723	1201
Sep 2012	67	47	8	6	240	295481	276	295	1439	2013
Totals						7791467	4728	12116	56443	96384

THE FORMATION OF QUARTZ & OTHER ASSOCIATED MINERALS

Natural Formation

Quartz can be formed naturally from the silica that is present in the earth's crust. When silicon (Si) and oxygen (O₂) combine, it will create silicon dioxide (SiO₂), which is quartz. For this reason, quartz will form underground quite easily whenever a combination of oxygen and silica-rich solutions are present. Quartz contains a crystal lattice, and does not require any specific temperature or pressure to form, occurring naturally from the presence of its component parts. Quartz forms in a great variety of different geological environments. It is also quite resistant to both physical and chemical weathering and, therefore, is a very common mineral in the earth's crust (second only to the feldspars).

Akhaven describes the occurrences of quartz as follows:

- 1) Vein Quartz—where hot, silica-rich waters deposit quartz in cracks or fissures of pre-existing rocks. Much vein quartz is milky or bull quartz, and good crystals are not common.
- 2) Gangue Quartz—quartz precipitating along and with hydrothermal ore veins
- 3) Quartz Veins and Pockets in Carbonate Rocks—formation of quartz in sedimentary rocks (especially limestones and dolomites) related to low-temperature hydrothermal environments. The hydrothermal waters percolated through the carbonates mostly depositing calcite crystals but at times quartz, usually either druzy or isolated stubby crystals. In some instances, the crystals grew in isolated gas cavities and crystals may be bright and shiny such as Herkimer Diamonds.
- 4) Authigenic Quartz—often produces well-developed crystals that grow within a solid rock. In soft sediments, many bazaar shapes of minerals form; for example, the barite and gypsum roses. In more indurated (hardened by heat/pressure) rocks, crystals with well-formed faces often form, such as pyrite cubes in limestone.
- 5) Concretions in Sedimentary Rocks—in early diagenesis of sedimentary rock, minerals precipitate from solutions in the pore spaces of sediments. The common minerals are quartz and calcite but also include barite, pyrite, and a host of others.
- 6) Pegmatites—these rocks form from hot fluids and often form gas pockets that might contain well-formed quartz crystals.
- 7) Miarole Pockets—quartz forming in gas pockets during the solidification of igneous rocks (similar to pegmatites).
- 8) Geodes and Cavities in Volcanic Rocks—quartz (often chalcedony and agate), and a number of other minerals, are common constituents in geodes. These include such items as thundereggs and various agates.
- 9) Skarns—quartz may form as igneous magma intrudes carbonate rocks.

Source Information:

www.quartzpage.de by A.C. Akhaven of Germany /The Ammonite-July 2013-Western Dakota Gem and Mineral Society Newsletter

OPAL-GEM OR WOOD OPAL

The Gemstone, Opal. Chemistry: SiO₂-nH₂O; Hydrated Silicon Dioxide. Class: Mineraloids. Group: Some mineralogists place Opal in the Quartz

Uses: As a gemstone and ornamental stone.

Opal has been a popular gem for many centuries and has a very interesting structure. Opal is considered a mineraloid because this structure is not truly crystalline. The chemistry of Opal is primarily SiO₂ and varying amounts of water. The amount of water varies from 5 -10% and greater. This water can help geologists determine the temperature of the host rock at the time the opal formed. Although there is no crystal structure (meaning a regular arrangement of atoms), Opal does possess a structure nonetheless. Random chains of silicon and oxygen are packed into extraordinarily tiny spheres. These spheres in most Opals are irregular in size and inconsistent in concentration. Yet in Precious Opal, the variety used most often in jewelry, there are many organized pockets of the spheres. These pockets contain spheres of approximately equal size and have a regular concentration, or structure, of the spheres. This has the effect of diffracting light at various wavelengths, creating colors. Each pocket produces a different color, with a different intensity depending on the angle from which a viewer sees it. The multicolored flashes of light that Opal emits gives it a truly beautiful and valuable look. (The Amethyst House) The Ammonite-December 2012 WSDGMS

Wood opal either is a form of [petrified wood](#) which has developed an opal sheen or, alternatively, but more rarely, where the wood has been completely replaced by [opal](#).

Wikipedia: **Wood Opal** is an [amorphous](#) form of [silica](#) related to [quartz](#), a [mineraloid](#) form, not a mineral. 3% to 21% of the total weight is [water](#), but the content is usually between 6% to 10%. It is deposited at a relatively low temperature and may occur in the fissures of almost any kind of [rock](#), being most commonly found with [limonite](#), [sandstone](#), [rhyolite](#), [marl](#) and [basalt](#). Opal is the national gemstone of [Australia](#), which produces 97% of the world's supply.[4] This includes the production of the state of [South Australia](#), which amounts to around 80% of the world's supply.[5]

Opal's internal structure makes it [diffract](#) light; depending on the conditions in which it formed it can take on many colors. Opal ranges from clear through white, gray, red, orange, yellow, green, blue, magenta, rose, pink, slate, olive, brown, and black. Of these hues, the reds against black are the most rare, whereas white and greens are the most common. It varies in optical density from opaque to semi-transparent. For [gemstone](#) use, its natural color is often enhanced by placing thin layers of opal on a darker underlying stone, like [basalt](#) ([www.wikipedi.com/wood opal](http://www.wikipedi.com/wood%20opal))-[pictures by Artfiberglass.com and Bing.com](#)

LAPIDARY HINTS

DETECTING FRACTURES:

A good way to tell how solid a slab is, heat it in hot water. The surface will dry immediately when removed from the water, but the fractures will still be filled with water and show up clearly. They can be marked with a pencil and used to orient your slab. (Little Gem,1980 / Ghost Sheet 2010via VGMS bulletin March 2010/ THE AMMONITE-December 2012 by WSDGMS

HOW TO HIDE A CRACK :

The secret of the art of healing fractures in the cab with epoxy is to shape your stone and semi-polish it. To get rid of that nasty crack, heat the stone to 200 degrees in an oven. Mix epoxy and apply to one edge of the crack. Gradually apply resin, working from one end of the crack to the other. THIS IS IMPORTANT! You will notice that the epoxy becomes very liquid when it touches the hot stone and it flows right into the crack. By applying the epoxy at one end and working toward the outside edge of the cab, the air is driven out and the epoxy replaces it. Then put the stone back in the oven and let it remain there for another 20 minutes. By this time, the epoxy will harden. Scrape off the surface and proceed with final polish. If you do this right, the fractures will be very difficult to detect. (News Nugget, Nov.1975/The Ammonite-July 2013)

[Continued at top of next page](#)

HOW TO CLEAN QUARTZ CRYSTALS:

Remove all dirt from crystals. Put them in a container that can be heated. Dissolve about 1 cupful of powdered oxalic acid in 2 1/2 gallons of water. Cover crystals with this acid solution. Cover with a lid; steam 3-6 hours over heat source-(like a hot plate) **DO THIS OUTSIDE ONLY!!** Let container of crystals cool for several hours. Rinse the crystals in clean water. To dispose of acid solution, neutralize it with baking soda. Don't breathe the fumes. Wear Rubber gloves. Always add **ACID TO WATER**, not water to acid.

Another report states oxalic acid solution can be used cold-just let crystals sit in it for several days. Wash/neutralize water.

.(From "Rear Trunk", the Nebraska Gem and Mineral Club-6-1996/The Ammonite-July 2013)

CRYSTALS WITH REDDISH IRON SPOTS:

At Tractor Supply (other store like it), you can buy "Iron Out." Clean crystals, dissolve Iron-Out in tap water, enough to cover crystals. Use a plastic bucket or glass jar. Let stand for several days. This method does not require heating, but you should still wear rubber gloves and don't breathe the fumes. (From "Rear Trunk", the Nebraska Gem and Mineral Club-6-1996/The Ammonite-July 2013)

FOR SMITHSMITHS: USING PRE-MADE BEZEL CUPS:

As a general rule of thumb I assume it's going to take me 15 - 20 minutes to make a bezel for an ordinary cabochon, so for some projects buying pre-made cups can save a lot of time. But if you go this route, keep in mind three things. First, try to get cups made from fine silver, not sterling. Remember that fine silver is softer-and burnishes over the stone more easily.

Second, you may have trouble matching the shape and size of the stone with the shape and size of the bezel cup. Purchased cups can only be found in a limited number of standard sizes. You may have to adjust your choice of gemstone to match the cup. The other consideration is that pre-made cups often have fairly low side walls. While these are fine for low-dome stones, they will not adequately secure stones with steep side walls.

Lastly before setting, check the fit of your gemstone in the cup, particularly around the bottom. The bottom corners of a stamped cup are much more rounded than a bezel you would fabricate yourself. This causes a problem with some stones. If your stone has a sharp edge around the bottom, burnishing over the bezel will place a lot of stress on the stone and may cause it to crack. To avoid this, I round off the bottom edge of the stone with a diamond file (or use sandpaper on soft stones). More Bench Tips by Brad Smith -(FROM : VGMS bulletin, 2/2012)/ THE AMMONITE-December 2012 by WDGMS

LAKE SUPERIOR AGATES



Article Continued top of next page

FACTS ABOUT LAKE SUPERIOR AGATES

A closer look at the history of the Lake Superior agate: The agate reflects many aspects of Minnesota. It was formed during lava eruptions that occurred in our state about a billion years ago. The stone's predominant red color comes from iron, the major industrial mineral in our state. Finally, the widely distributed agate reveals the impact of glacial movement across Minnesota a mere 10,000 to 15,000 years ago.

Geologic History:

More than a billion years ago, the North American continent began to split apart into two separate continents. This catastrophic event, spurred by molten rock moving deep within the earth, poured out massive, iron-rich lava flows. These flows now are exposed along the north and south shores of Lake Superior. The tectonic forces that attempted to pull the continent apart, and which left behind the lava flows, also created the Superior trough. The trough eventually became the basin of Lake Superior and the lava flows became the birthplace of Lake Superior agates.

Water vapor and carbon dioxide became trapped within the solidified flows in the form of millions of bubbles, called gas pockets or vesicles. Later, groundwater carrying ferric iron, quartz, and other dissolved minerals passed through the trapped gas vesicles. These quartz-rich groundwater solutions crystallized into concentric bands of fine-grained quartz called chalcedony. Over the next billion years, some of these quartz-filled, banded vesicles -- agates -- were freed by running water and chemically disintegration of the lavas, since these vesicles were now harder than the lava rocks that contained them. The vast majority, however, remained lodged in the lava flows until the next major geologic event that changed them and Minnesota.

About 2 million years ago, the world's climate grew colder signaling the beginning of the Great Ice Age. A lobe of glacial ice, the Superior lobe, moved into Minnesota 10,000 to 15,000 years ago. It followed the agate-filled Superior trough. The glacier picked up surface agates and carried them south. Its crushing action and cycle of freezing and thawing at its base also freed many agates from within the lava flows and transported them, too. The advancing glacier acted like an enormous rock tumbler, abrading, fracturing, and rough-polishing the agates.

The Lake Superior agate differs from other agates found around the world in its rich red, orange, and yellow coloring. This color scheme is caused by the oxidation of iron. Iron leached from rocks provided the pigment that gives the gemstone its beautiful array of color. The concentration of iron and the amount of oxidation determine the color within or between an agate's bands.

The gemstone comes in various sizes. The gas pockets in which the agates formed were primarily small, about the size of a pea. A few Lake Superior agates weigh more than 20 pounds, about the size of a bowling ball. Such giant agates are extremely rare, but no doubt others are yet to be discovered. The most common type of Lake Superior agate is the fortification agate with its eye-catching banding patterns. Each band, when traced around an exposed pattern or "face," connects with itself like the walls of a fort, hence the name fortification agate. A common subtype of the fortification agate is the parallel-banded, onyx-fortification or water-level agate. Perfectly straight, parallel bands occur over all or part of these stones. The straight bands were produced by puddles of quartz-rich solutions that crystallized inside the gas pocket under very low fluid pressure. The parallel nature of the bands also indicates the agate's position inside the lava flow.

Probably the most popular Lake Superior agate is also one of the rarest. The highly treasured eye agate has perfectly round bands or "eyes" dotting the surface of the stone. Occasionally, collectors find a gemstone with an almost perfectly smooth natural surface. These rare agates are be-

lieved to have spent a long time tumbling back and forth in the waves along some long-vanished, wave battered rocky beach. They are called, appropriately enough, "water washed" agates. Finally, the rarest Lake Superior agate is the one that recurs in a collector's dreams but is discovered in reality perhaps once in a life time. On average only one out of every 10,000 agates fits this description. They are the ones weighing 2 pounds or more and having perfect shape, color, and banding quality. They are the ones called "all-timers."

Description

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You have decided to hunt for Lake Superior agates, but how do you know what to look for? There is no simple answer. Usually, the richly colored banding pattern is not well exposed and prospectors must look for other clues to the presence of agates.

The following characteristics will help you identify agates in the field:

The banding planes along which the agate has broken are sometimes visible, giving the rock a peeled texture. It appears as though the bands were partially peeled off like a banana skin. Iron-oxide staining is found on nearly all agates to some degree, and it generally covers much of the rock. Such staining can be many different colors, but the most common are shades of rust-red and yellow.

*Translucence is an optical feature produced by chalcedony quartz, the principal constituent of agates. The quartz allows light to penetrate, producing a glow. Sunny days are best for observing translucence. A glossy, waxy appearances especially on a chipped or broken surface, is another clue. A pitted texture often covers the rock surface.

*A pitted texture often covers the rock surface. The pits are the result of knobs or projections from an initial layer of softer mineral matter deposited on the wall of the cavity in which the agate formed. Later, when the quartz that formed the agate was deposited in the cavity, these projections left impressions on the exterior. From: www.dnc.state.mn.us/education/geology/digging/, November 2012-The Ammonite-WSDGMS

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VENDOR/ DEALER CONTRACT

We the undersigned hereby make application for table space for the July 12&13, 2014 show noted above, subject to all rules as specified by the host club. Table rental is \$75 per front and back table pair. (2 TABLES) There are no limits to the number of table pairs you can rent. Every effort will be made to provide the equivalent of 8' by 2.5' tables, but substitution may be required due to table availability (four six foot table pairs instead of three eight foot table pairs, for example). **Display cases this year are reserved for State use. DO YOU NEED A WALL SPACE?** _____

WE NEED _____ TABLE PAIR(S)x \$75 FOR A TOTAL TABLE RENTAL OF\$ _____

Please enclose at least 50% of table fee in check, money order or US currency to secure your spot. The balance, if any, is due before April 1, 2014 or payment-less 10% handling fee- will be refunded and tables contracted to others. **Space is "first come" contracts with fee to: Attn: Show Chairperson, P.O. Box 123, Mills WY 82644.** We will make every effort to honor your requests but reserve the right to assign space as needed. **RESERVE EARLY!** Refunds (less 10% handling) can be made if cancellation is received in writing by April 1,2014. Questions contact Helen Hoff 307-266-2839 hmhoff@bresnan.net

You are expected to donate some small item for our silent auction. THANK YOU!

Please plan to set up BETWEEN NOON AND 6 PM on Friday, July 11TH. Bring table and overnight covers. Wall display may be available depending on your space. There are plenty of outlets for electricity but you may want an extension cord. There are restrooms, drive- in loading bay and overnight rooms on site.

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Please allow sufficient lead time before the date of the event to provide time for assembly of the Newsletter. As a rule of thumb, I need three weeks from the due date for submissions.