



ROCK-N-ROSE



NEWSLETTER OF THE EAST TEXAS GEM & MINERAL

SOCIETY

PAGE 1

VOLUME 37

TYLER, TEXAS

ISSUE 1

JANUARY 2011

Coming Shows, 2011

FEBRUARY 19-20
GEORGETOWN, TX
Williamson Co. G&MS
San Gabriel Park

FEBRUARY 26-27
PASADENA, TX
Clear Lake G&MS
Pasadena Convention
Ctr.

MARCH 05-06
ROBSTOWN, TX
Gulf Coast G&MS
Regional Fairgrounds

MARCH 19-20
LIVE OAK, TX
Southwest G&MS
Live Oak Civic Ctr.
8201 Pat Booker Rd

INSIDE THIS ISSUE

2. January Meeting Minutes
3. Index Fossils
4. The Major Fossil Groups
5. Precious Opals
6. Precious Opals Cont.
7. Shop Tips and Tricks
8. Officers and Directions

CONGRATULATIONS!

A BIG THANK YOU TO ALL WHO HAD A PART IN MAKING OUR ANNUAL SHOW SUCH A SUCCESS.



Authors and Editors Contest 2010



For a rather small club, we did very well in the 2010 Authors and Editors Contest. Several of our members had winning features or poems, bringing recognition to the East Texas Gem and Mineral Society. Thanks to the members who have submitted items to be published in the newsletter, as they make our newsletter more personal to our club. Keep up the good work! Please, don't hesitate to send me more hobby related info. SB

Your Editor pictured here with the certificates and 1st place award received from the SCFMS



JANUARY MEETING MINUTES

The East Texas Gem and Mineral Society monthly meeting was called to order by Club President, Rip Criss, at 7:00 p.m., January 10, 2011, at the Discovery Science Place in Tyler, TX.

Motion to accept minutes of the December 2010 meeting as published in the Rock-N-Rose newsletter was made by Becky Whisenant, seconded and motion carried. Jeri Kitchens, Club Treasurer, gave the financial report.

Rip asked for volunteers to work at the club show and asked them to sign up on the schedule sheets. Don Campbell and Rip discussed briefly what the club members will need to do to make the January 2011 show a success. The club hosts a "dealer's dinner" the Friday night of the show with the club providing the meat, and members were asked to volunteer to bring side dishes, drinks and deserts.

Rip gave a short recap of the meeting December 11, 2010, of the South Central Federation of Mineral Societies, of which our club is a member. Susan Burch, editor of the Rock-N-Rose Newsletter had award certificates for several club members and a number of them were for her efforts on behalf of our club. The certificates were awarded and pictures taken of Susan. In a related matter, Rip asked for a motion to pay the annual Federation dues, motion made by Becky, seconded by Penny and carried.

Becky Whisenant said that Mr. Ducote, who owns the land where club members have gone on field trips in the past for petrified wood, has been ill but she will try to make arrangements for a trip in the Spring.

Door prizes were awarded and members took a short break for refreshments.

Robert Ortega presented a very interesting and informative program on making chain mail jewelry.

The official meeting was adjourned at 8:30 p.m.

Respectfully Submitted:

Penny Hawkins, Club Secretary



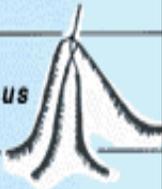
BEST WAY TO CONTACT YOUR EDITOR

Hi all, it has come to my attention that sometimes I receive e-mails at different times during the month from members of the club asking questions or providing me with information. Unfortunately, due to time constraints, I check the rocknoseeditor@hotmail.com e-mail only a few times a month. These are mainly centered around the deadline for the newsletter. This being the case, I wished to let everyone know that I am available throughout the month, however, the best way to contact me is via cell phone. Please, don't hesitate to call, whether it be for a question or to let me know you are sending me an e-mail. Particularly if the matter needs to be addressed soon.

Thank you, Susan Burch, Editor

Index Fossils

Keyed to the relative time scale are examples of index fossils, the forms of life which existed during limited periods of geologic time and thus are used as guides to the age of the rocks in which they are preserved. Via USGS website.

| | | | | | |
|--|----------------------|------------------------------------|--|-----------------------------------|---|
| CENOZOIC ERA (Age of Recent Life) | Quaternary Period | <i>Pecten gibbus</i> |  | <i>Neptunea tabulata</i> |  |
| | Tertiary Period | <i>Calyptrophorus velatus</i> |  | <i>Venericardia planicosta</i> |  |
| MESOZOIC ERA (Age of Medieval Life) | Cretaceous Period | <i>Scaphites hippocrepis</i> |  | <i>Inoceramus labiatus</i> |  |
| | Jurassic Period | <i>Perisphinctes tiziani</i> |  | <i>Nerinea trinodosa</i> |  |
| | Triassic Period | <i>Trophites subbullatus</i> |  | <i>Monotis subcircularis</i> |  |
| PALEOZOIC ERA (Age of Ancient Life) | Permian Period | <i>Leptodus americanus</i> |  | <i>Parafusulina bosei</i> |  |
| | Pennsylvanian Period | <i>Dictyoclostus americanus</i> |  | <i>Lophophyllidium proliferum</i> |  |
| | Mississippian Period | <i>Cactocrinus multibrachiatus</i> |  | <i>Prolecanites gurleyi</i> |  |
| | Devonian Period | <i>Mucrospirifer mucronatus</i> |  | <i>Palmatolepus unicornis</i> |  |
| | Silurian Period | <i>Cystiphyllum niagarensis</i> |  | <i>Hexamoceras hertzeri</i> |  |
| | Ordovician Period | <i>Bathyrurus extans</i> |  | <i>Tetragraptus fructicosus</i> |  |
| | Cambrian Period | <i>Paradoxides pinus</i> |  | <i>Billingsella corrugata</i> |  |
| | PRECAMBRIAN | | | | |



The Major Fossil Groups

Fossils can be grouped and studied in many ways, by size, habitat type, or phylogenetic groups. Large fossils like dinosaurs, corals, echinoderms and macro-mollusks ([macrofossils](#)) were the primary emphasis of paleontologic studies in the 1700s, 1800s and early 1900s, because they were easily recognizable in the field and did not require special equipment to study them. As new and better microscopes were invented, more and more paleontologists began to use [microfossils](#) to solve a variety of geologic problems. Microfossils currently are the preferred tools at the USGS. These small fossils are generally much more widespread and abundant in sedimentary deposits than larger fossils, and because of their size, much smaller samples can be collected. Drilling of core-holes, which obtains important rock samples from beneath the earth's surface, has made microfossils an indispensable tool because only occasionally will macrofossils be preserved in the two-inch diameter cores that are the product of most coring operations. In this section, you will learn about each of the fossil groups that are being used to solve geologic problems at the USGS. Via USGS website.

| Primary Habitat | | |
|--|---|---|
| Marine/Aquatic | | Terrestrial |
| Benthic | Pelagic | |
| Brachiopods |  Calcareous Nannofossils |  Mollusks |
|  Corals | Conodonts |  Spores and Pollen |
|  Foraminifera | Diatoms |  Vertebrates |
|  Mollusks |  Dinoflagellates | |
| Ostracodes | Foraminifera | |
| | Radiolaria | |



Precious Opals **and Why They Display Color** **By Sarah Lee Boyce and Carl Talbott**



Opal, a mineraloid of non-crystalline silicon dioxide and water, may be found in the fissures of common porous rocks such as sandstone, rhyolite, marl, and basalt as well as in fossils. Opal forms when large quantities of terrestrial waters wash over sandstone (or similar porous rock or fossil) and chemically weather it such that large quantities of dissolved silica percolate through the rock strata until it reaches an impervious level. As the silica solution comes to rest, it spreads out along this level, fills voids or cracks within the strata, and begins to solidify over time through evaporation.

Although Opal is said to have no crystalline structure, at the micro-level, one type of opal (known as Opal-AG) contains silica spheres with diameters on the order of 140 to 300 nanometers organized in a number of cubic or hexagonal close packed-lattices that are several hundred times larger than the fundamental silica spheres. Water fills the space between the silica spheres, and when the spacing between packed planes of spheres is approximately one-half the wavelength of a visible light component, that wavelength light can be diffracted by the grating created by the stacked planes.

These internal colors, then, depend on the spacing between the planes (i.e. the size of the spheres) and their orientation with respect to light.

1. The observed color is related to the size of constituent spheres in each close-packed-lattice (i.e., blue wavelengths will be diffracted by the smaller sized spheres of approximately 140 nanometers diameter whereas red wavelengths will be diffracted by larger sized spheres of approximately 240 nanometers).

First discovered and described by Australian researchers in 1965, this phenomenon is called a “play-of-color” or “fire” and is the hallmark of precious opal.

2. Another type of opal (Opal-AN) is amorphous water containing silica-glass, known as Hyalite.
3. Hyalite, has a glassy and clear appearance with an internal play-of color. Under long-wave black light, Hyalite glows bright green. If there is no presence of an internal play-of-color in either Opal-AG or Opal-AN, then these are called common opals even though the silica sphere structure may be present.

The play-of-color in precious opal has color patches that often vary in size and shape and that change color as the direction of light sources, orientation of the opal, or direction of viewing is changed. This constitutes the opal’s “fire pattern” commonly classified into categories such as pinfire, flashfire, and harlequin.



4. Since both Opal-AG and Opal-AN are both noncrystalline substances, in the presence of low levels of pressure or heat, they can gradually transform into Opal-CT and then into Opal-C both of which are microcrystalline in nature where the spheres of silica grow into blades of cristobalite and tridymite. These forms of opal have no play-of-color (and therefore are not precious opal) because the close packed lattice structure is disrupted by the microcrystalline growth. Such microcrystalline chalcedony, for example, can be found in the Monterey formation on the coastal regions of south and central California where massive bands of opal have undergone this transformation.
5. Moreover, Oregon Thundereggs may have any one of a variety of Opal-CT or Opal-C fillings that can be opaque blue, opaque red, translucent pastel blue, translucent yellow, translucent red, white, or colorless, and a small percentage may show a play-of-color being Opal-AG or Opal-AN.

In more recent news, NASA's Mars Reconnaissance Orbiter (MRO) spacecraft has found evidence of hydrated silica (opal) on the planet Mars. According to Dr. Ralph Milliken of NASA's Jet Propulsion Laboratory, the MRO has detected "numerous outcrops of opal-like minerals, commonly in thin layers extending for very long distances around the rim of Valles Marineris." This suggests that water remained on the Martian surface for an extended period of time. "What's important is that the longer liquid water existed on Mars, the longer the window during which Mars may have supported life," said Dr. Milliken. Rockhounds, on the other hand, may have something else in mind rather than life on Mars.

References:

1. Graetsch, H. (1994), "Structural Characteristics of opaline and microcrystalline silica minerals", "Silica, physical behavior, geochemistry and materials applications". Reviews in Mineralogy, Vol. 29, Editors PJ Heaney, Connecticut Prewitt, GV Gibbs, Mineralogical Society of America.
2. Downing, Paul B. (2007), Opal Identification and Value, Majestic Press, Estes Park, Colorado.
3. Pough, Frederick H. (1953), A Field Guide to Rocks and Minerals, Houghton Mifflin Co, New York.
4. Downing (2007), pp. 53-68.
5. Rogers, Austin F. (1928), "Natural History of the Silica Minerals", American Mineralogist, Vol. 13, pp. 73- 92

From The RockCollector 1/11 Lodestar 12/10, via Canaveral Moonstone, 1/11; via Stoney Statements 1/11



SHOP TIPS AND TRICKS

Ripple Marks on Your Slabs?

There are several reasons for this problem: the carriage or arbor may be out of alignment; the blade may be dished, the bearing may be faulty; the blade may not fit the shaft properly; the feed speed may be too fast.

To find a remedy, slow the feed speed. At the same time, make sure the blade is sharp. If it is not sharp, dress by running a piece of brick or grinding stone through several times. If this doesn't help, check the alignment. Check the bearings by trying to wiggle the shaft. If it wobbles, the bearings are faulty. Be sure there isn't any dirt under the shaft collars. If your check indicates misalignment, and you don't have the experience to re-align the carriage, contact your supplier or manufacturer.

Don't let the blade slow down during cutting. Variations in rpm destroy accuracy, reduce cutting efficiency, and dulls the cutting edges of the blade. Use ample motor power. When running the piece through by hand, use only light, firm pressure. Tighten vise clamps after every few cuts for a smoother cut when successive slabs are sawed from one piece of rough.

To cushion rocks in a vise, use rubber composition such as stair treads, boot soles, etc. If blocks must be used, line with the composition for a snug fit.

~From Breccia 1999, others, via Pineywoods Rooter 2/09, The Roadrunner 3/09; via Stone Chipper 08/09



A geology student asked the farmer if it would be o.k. to hunt fossils on the farm. Said the farmer, "I guess it will be o.k. so long as you don't shoot towards the house."

~From Petrified Digest 6/05, via The Roadrunner 4/09; via Stone Chipper 08/09

CLUB OFFICERS

PRESIDENT: Robert (Rip) Criss 903-922-2856
P.O. Box 340
Oakwood, TX 75855

VICE PRESIDENT Becky Whisenant 903-795-3652
3786 CR. 2107
Rusk, Texas 75785

TREASURER: Jeri Kitchens 903-245-8822
2533 Chelsea Dr.
Tyler, TX 75701

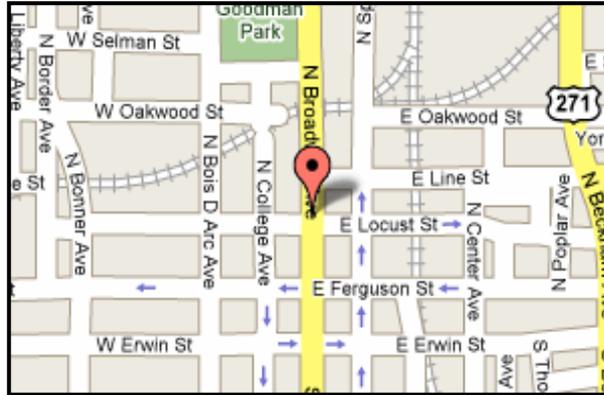
SECRETARY: Penny Hawkins 903-586-4463
134 CR 3151
Jacksonville, Texas 75766

MEETING PROGRAM CHAIRMAN: Don Campbell 903-566-6061
3319 Omega Dr.
Tyler, TX, 75701

FIELD TRIP CHAIRMAN: Your name could be HERE!!!
Volunteer Today!

SHOW CHAIRMAN: Keith Harmon 903-581-4068
8316 Oxford St.
Tyler, TX 75703

CLUB ADDRESS: East Texas Gem & Mineral Society
P. O. BOX 132532
Tyler, TX 75713-2532



THE EAST TEXAS GEM AND MINERAL SOCIETY MEETS ON THE FIRST MONDAY OF EACH MONTH, UNLESS THAT DAY IS A HOLIDAY, THEN THE MEETING IS MOVED TO THE SECOND MONDAY. WE MEET AT THE DISCOVERY SCIENCE PLACE, 308 NORTH BROADWAY, JUST NORTH OF DOWNTOWN TYLER, TEXAS. MEETINGS BEGIN AT 6:45 P.M.

NOTE TO EDITORS

Feel free to use contents and graphics for non-profit newsletters. Give credit when and where due.

Purpose of the East Texas Gem & Mineral Society

Is to promote the study of geology, mineralogy, fossils and the lapidary arts. The public is always invited to attend all club meetings.

Annual dues are \$10.00 for adults and \$2.50 for juniors.

Please send any info or articles to be included in the newsletter to the Editor by the 15th of the month. Please keep your address, phone and email information up-to-date, so that we can get the newsletter to you in a timely manner. Out-of-date information costs the club time and money in returned newsletters.

Thank you... SB



EDITOR: Susan Burch
20427 US. Hwy 69 S.
Alto, TX 75925

E-Mail: rockroseeditor@hotmail.com
Phone: 936-615-5397