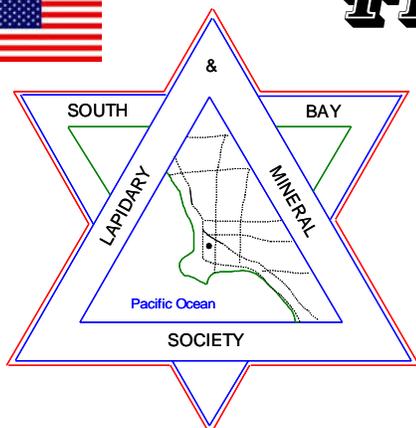




THE AWARD WINNING



Agatizer

South Bay Lapidary & Mineral Society, Inc.
P.O. Box 1606 Torrance, Ca. 90505



Affiliated with The California Federation of Mineralogical Societies and The American Federation of Mineralogical Societies



- SILVER -

[Coin, Bar, & Natural Crystal]



Silver is the “whitest” of all metals. It is highly lustrous and can be polished to a mirror finish. Silver is harder than gold, but softer than copper. It has a melting point of 1760°F (960°C.) –almost 200°F below that of gold.

“Sterling” is an alloy of silver and copper that has a historical derivation. Commerce in the 12th century between Germany and England required a dependable form of money for trade. Coins named Easterlings were cast of 92.5% silver and 7.5% copper. Eventually, the Ea in Easterling was dropped to Sterling.

In times of past, precious metals like gold and silver were a means of trading and saving one’s values. Today, most of us are only left with “In God We Trust” and a feeble hope & faith in our governments to back the massive amounts of debt and paper currencies circulating all around the world. And remember, inflation is a stealth tax on all money on deposit.

Workability & Hardness of Silver Alloys

Since copper provides the best combination of wear qualities, it is the most common alloying element used by jewelers and silversmiths. In sterling and coin alloys, the

copper tends to dissolve into the silver, resulting in a homogeneous large-structure, which is naturally soft and ductile. Cold working these alloys by rolling, pressing, hammering, or wire drawing, causes some of the crystals to become deformed and smaller, which reduces the alloy's ductility.

Ductility Definition

1. capable of being hammered out thin, as certain metals; malleable
2. capable of being drawn out into wire or threads, as gold
3. able to undergo change of form without breaking
4. capable of being molded or shaped; plastic

Heat treatment can be used to increase hardness and decrease ductility. The process, known as *precipitation hardening* involves heating and cooling the silver in such a way as to cause copper to precipitate out of solid solution, thereby producing a fine- binary structure. This type of structure is hard, but it is also difficult to work, and has a tendency to crack.

When a specific degree of hardness is desired in the finished article of jewelry or silverware, it is best obtained by controlling the amount of work done on the article after the final anneal, with all work being performed uniformly over the *entire piece to prevent* cracking at stress points.

– Continued on page 6

OFFICERS FOR 2016

President Nancy Pekarek 310 257-8152 pekareks@hotmail.com
 Vice President Mattia Corbo 310 328-2762 mattiacorbo@hotmail.com
 Secretary Jamie Erickson
 Treasurer Leslie Neff 310 318-2170 lesneff@aol.com
 & Lynette Vandever 310 379-5852 lyndyla@aol.com
 Fed Director Terry Vasseur 310 644-2029 wookman@dslextreme.com

STANDING COMMITTEE CHAIRFOLKS

Displays Larry Hoskinson 310 318-2170 lesneff@aol.com
 Drawings Leslie Neff 310 318-2170 lesneff@aol.com
 Education Leslie Neff 310 318-2170 lesneff@aol.com
 Workshop
 Editor Terry Vasseur 310 644-2029 wookman@dslextreme.com
 Wally Ford Larry Hoskinson 310 318-2170 lesneff@aol.com
 Scholarship Fund
 Field Trip Craig Polliard 310-533-4931 craigpolliard@yahoo.com
 Coordinators Chris Curtin 310-480-4378 gundodude26@aol.com
 Getting-to-know-you Craig Polliard 310-533-4931 craigpolliard@yahoo.com
 Historian Gale Fussello 310 702-3633 fussello@yahoo.com
 Hospitality Jim Erickson 310 640-6199 bmcjim@att.net
 Membership Gale Fussello 310 702-3633 fussello@yahoo.com
 Property Steve Pekarek 310 257-8152 pekareks@hotmail.com
 Publicity Kathy Polliard 310 533-4931 kjpolliard@yahoo.com
 Refreshment Al Richards 310 675-6606 al4bty25@att.net
 Director
 2016 Show Leslie Neff & 310 318-2170 lesneff@aol.com
 Chairs Larry Hoskinson
 Transportation Manager

CLUB EXPERTS

Chris Curtin - Fossil Preparation
 Burt Dobratz - Fused Glass
 Larry Hoskinson - Opal Cutting
 Peggy Hill - Lapidary & Beads
 Ken Ouellette - Cuttle Bone Casting & Silver Fabrication
 Chris LeMaster - Tumbling
 Ricky McArthur - Inlay (Intarsia)
 Ken Pauley - Zeolite Minerals
 Craig Polliard - Lost Wax Casting
 Toy Sato - Suiseki (Stone Appreciation)
 Terry Vasseur - Silver Fabrication

MISSION STATEMENT

This society was formed to collect and study minerals; to teach lapidary arts, to disseminate knowledge of mineralogy, lapidary work, and related activities; to exhibit specimens for public education; and to exchange information related to the earth sciences.

MONTHLY MEETINGS

Meetings are scheduled on the First Tuesday of the month, 6:30 p.m., in the meeting room of the Torrance Public Library, 3301, Torrance Blvd.. Visitors and guests are always welcomed at all club events.

MEMBERSHIP

Annual dues for a single member is \$15 and \$20 for a family payable by the 1st of the year. An annual 12 month subscription to the Agatizer comes with membership. A subscription to the Agatizer alone is \$20.

WEBSITE

Webmaster: Roger Mills palosverdes.com/sblap

PDF READER LINK

<http://www.adobe.com/products/acrobat/readstep2.html>

AGATIZER CIRCULATION

June 2015, 99 - Dec 2015 97

SBL&MS TAX STATUS

The South Bay Lapidary & Mineral Society is a nonprofit 501 (c) 3 organization, Tax ID # 95-350730

Display & Donate and Refreshments

February

Display & Donate: What I Found at Quartzsite

Drinks: Breanna Brown

Munches: Steve Karno, Leslie Neff & Larry Hoskinson

March

Display & Donate: (Pending 2016 Roster)

Drinks: Al Richards

Munches: Ken Ouellette, Terry & Teresita Vasseur

You don't have to be great to start, but you have to start to be great.

Zig Ziglar



Silver Fabrication

Feb Anniversaries

None

Feb Birthdays

Megan Fox ?	Feb	4
Richard Egger ?	Feb	5
Terry Vasseur	Feb	16
Ken Ouellette	Dec	22

FEDERATION DIRECTOR

DUGWAY GEODE CLAIM

Save the Geodes! The BLM is threatening to close the only commercial claim on the Dugway Geode beds, in operation for the last 50 years, because the renewal paperwork was late this year.

The claim is run by the Crapo family under the business name "The Bug House" and new mining claims will not be issued by the BLM for any commercial geode mining because the geode bed is a restricted area.

Public response to urge renewal of the claim is critical. The Crapo family has always supported the rock hound community and made sure that anyone who collected on their claim came away with lots of good geodes. Now it's our turn to support them so please get the word out to anyone interested in preserving this important collection area.

Please send your e-mails in support of renewing this important claim to the following e-mail addresses at the BLM and bcc the Bughouse at their address below, so they can see who is supporting them.

Deputy State Director Lands & Minerals: Kent Hoffman
E-mail: khoffman@blm.gov

Minerals Support Supervisor: Robert L Bankert E-mail: rbankert@blm.gov

Bureau of Land Management Fillmore Field Office E-mail: utfmmail@blm.gov

The Bug House E-mail: bughouse@xmission.com
Thank you, Golden Spike Gem & Mineral Society
Jeopardy

From The Editor's Desk

Terry Vasseur



Shhhhh! Don't spread this around.
(The word is out we are finally getting a new secretary for 2016. All I can say, she comes from a family that has been with us for as far back as I have been here and I'm excited!)

SOUTH BAR LAPIDARY
OFFICERS FOR 2016
At the Installation Dinner



L-R: President Nancy Pekarek, VP Mattia Corbo, Treasurer Leslie Neff & Lynette Vandever, Federation Director Terry Vasseur, 2016 Secretary J____ E____ (unable to be here)

The Installation Dinner

32 members from Brandon and Thalia (the only member from birth and still a member) to Mary who joined in 1975 and still a member -joined in a lovely meal and fun Installation.

The food at China Buffet was great - sushi, crab legs, salads, fish of all kinds - I didn't even get to dessert I was so full of sushi!

It was fun to talk about rocks, field trips, life, family and travel and just be able to roam around and socialize.

We voted Jamie Erickson as our new secretary. It is so nice to have her back in CA!

A good time was had by all!

By Leslie Neff



Jason Rehors sent me this Geology website to look it over. I recommend you to take a look at it and see what a well designed website looks like. **Don't worry, it's safe!**

Resources for the Geology Enthusiast...

www.virtualmuseumofgeology.com



TIPS FROM A JEWELER'S BENCH

Brad Smith brad@greenheart.com
[BenchTips]

SHARP KNIVES FOR CUTTING MOLDS

Cutting molds is easier and more precise with a sharp blade. A new Xacto blade is sufficient for cutting RTV molds but is usually not sharp enough for vulcanized rubber. For that it's best to use scalpel blades available from most jewelry supply companies.



The #11 blade is triangle shaped, and the #12 is hawksbill shaped. I find the hawksbill is particularly nice for cutting the registration keys of the mold.

USE YOUR THUMB

When using multiple bits in a Foredom, we often have to deal with several different shaft sizes - the usual 3/32 inch burs, the larger 1/8 inch shafts sizes and of course the many different sizes of drills. For some reason I really dislike having to turn the key multiple times to open or close the jaws of the handpiece chuck.

So I have two ways to speed up that task. For opening up the jaws, I just remember "four", the number of turns I have to make to open the chuck just enough from the 3/32 bur shaft size to the larger 1/8 bur shaft size.



For closing the jaws around a smaller shaft, there's a neat trick. Hold the new bit in the center of the open jaws of the chuck, put your thumb lightly onto the outer toothed collar of the chuck, and gently start up the Foredom. As the chuck turns, it will naturally tighten the jaws around the bur shaft or the drill bit. Then all you have to do is a final tightening with the key.

=====
"Bench Tips for Jewelry Making" and
"Broom Casting for Creative Jewelry"
are available on Amazon

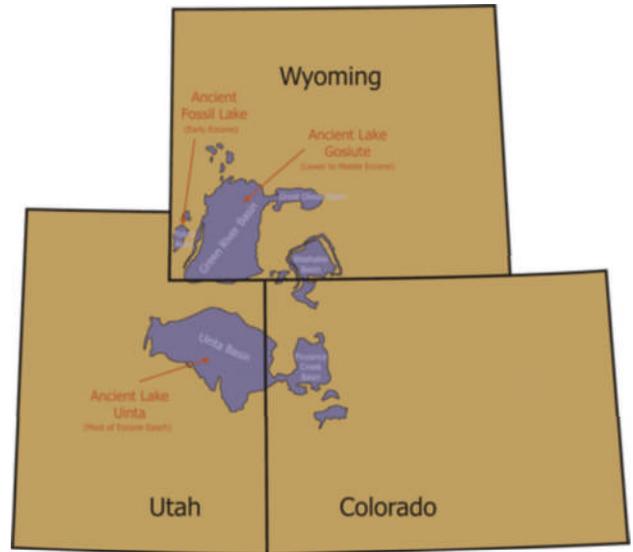
Green River Formation

The Virtual Museum of Geology

Eocene Epoch - Green River Formation deposits are found in Colorado, Wyoming and Utah, generally along the present-day Green River. As an important lagerstätte*, the Green River Formation sediments represent a continuous record of deposition that spans a 5 million year period from 53.5 to 48.5 million years ago. During that time, the uplift of the Rocky Mountains was nearly complete, creating a landscape of rugged mountain highlands separated by intermountain basins, many of which were occupied by lakes. Three primary ancient lakes identified from sediment concentrations have been given the names Lake Uinta, Lake Gosiute and Fossil Lake. Each lake represents deposits during different Tertiary timeframes:

- Fossil Lake (Early Eocene)
- Lake Gosiute (Lower to Middle Eocene)
- Lake Uinta (spans most of the Eocene Epoch)

***Lagerstätte** is a sedimentary deposit that exhibits extraordinary fossils with exceptional preservation—sometimes including preserved soft tissues. These formations may have resulted from carcass burial in an anoxic environment with minimal bacteria, thus delaying decomposition. Lagerstätten span geological time from the Neoproterozoic era to the present.



PALEOENVIRONMENT

The climate during the early Eocene was warm and temperate to sub-tropical, then transitioned to slightly drier at the start of the mid-Eocene. Intermountain basin lakes in the Green River area were surrounded by forests of sycamores, while palms and cat-tails dominated the lake margins.

LITHOLOGY

– Continued on page 9



ON THE ROCKS WITH TV

Tips-Ideas-Questions & Answers, on Anything Relating to the Hobby (submissions welcomed)

Pigeon Blood Agate

Last October we met up with some friends (Marty & Linda Dougherty) in Arizona for a few days of rock hunting in Utah. One particular canyon off Ruby Ranch Road (off I-70 East of Green River), we collected a bucket of a carnelian agate. Most of it was small chips and shards of the highly sought after pigeon blood agate. Further up the canyon we found larger pieces riddled with fissures and often attached to brown, blocky rock that looks a lot like fractured Arizona petrified wood.

Three months later I'm working on the better looking chips and cutting the larger pieces in hopes of a pleasant surprise. The agate has a mohs hardness of 7.5 that slows the cutting process when your saw blade is getting near to retirement.

Watching a 60 year old ten inch saw doing its thing, is conducive to let one's mind to wander. Marty had one of William A. Kappel's, Utah Rockhounding book. In it, William pondered over how that canyon got so much broken up beautiful agate. Did rockhounders beat the hell out of it or was this canyon a native American's workshop for arrow heads? Neither seemed right. It was too much



The Larger Specimens I Think Are Petrified Wood

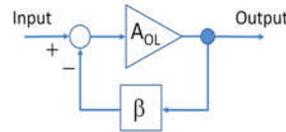
scattered too far.

The Ruby Ranch area is in the Brushy Basin, the youngest member of the Morrison Formation. It is mudstone rich



The Bulletin Board

- ✓ NEXT MEETING: February 2, 6:30pm
- ✓ BOARD MEETING:
- ✓ PROGRAM: *What I Found at Quartzsite*
- ✓ FIELD TRIPS: See page 9



FEEDBACK

Letters to the Editor

Open loop, No feedback this month.

and volcanic ash a plenty. Just go to the Goblin Valley State Park (60 miles South West as the crow flies) and see for yourself the mudstone that made the Hoodoos.

According to the experts, the red wood found in the Brushy Basin was deposited by a flood (along with the mud and gravel). And by the way, Frank J. Daniels (the pet wood guy) says the Petrified Red Wood found in the Brushy Basin, *'was most likely casts that got their name by their color red... not a species of red wood, because conifers were Jurassic age woods!'*

Thirty miles East from the Ruby Ranch is the Yellow Cat, the most well known area for the finest petrified red wood and gem dinosaur bone anywhere in the world. The pickin's there are pretty thin now after 70 years of rockhounding but we had to go there though anyway. The name alone still draws us rockhounders even though we didn't find much at all. Once again Frank J. Daniels says *'the name was derived by a mountain cat killed near a campsite located by one of the rare springs. Another tale tells of an abandoned yellow-Caterpillar bulldozer. Regardless how it got its name, now it is found on topographic maps as Yellow Cat Flats.'*

The saw finally cut my rock. Not the one below. It's a beauty from the somewhere in the Yellow Cat. Wish it was mine.

Yellow Cat, Utah
Red Wood
Cast



Continued from page 1 – Silver

Precipitation hardening involves the following 5 stage procedure:

1. Heating the alloy to 1375-1400°F (745-760°C.)
 2. Holding at temperature for 15 minutes.
 3. Quenching rapidly in cold water.
4. The alloy is now in a softened condition, and can be re-hardened by heating to 600°F (316°C.) for 30-50 minutes and then (5.) air cooling. The resulting hardness is equivalent to the hardness obtained by cold working to a 50% reduction.

The Importance of Annealing

Annealing is an effective method for re-softening silver alloys that have lost their ductility due to working or heat treatment. It permits sterling to be worked with reductions of 90% and even more. When the metal becomes too hard for further working, it is simply annealed and re-softened.

Annealing Precautions

When sterling silver is annealed, care must be taken to avoid "overheating—a condition that increases hardness by promoting undesirable grain growth and a significant loss of ductility.

In torch annealing, it is particularly important not only to see that no part of the work is overheated, but also that all parts of the object or article are brought to the full annealing temperature. Since sterling silver anneals so rapidly, it is not necessary to hold it at the annealing temperature for very long. When it begins to glow pink, you have generally achieved annealing temperature for sterling silver.

The best annealing temperature for normal softening of sterling silver is between 1100°F and 1200°F (593°C.-649°C). Temperatures above 1200°F (649°C.) tend to dissolve the copper-rich phase and unless the cooling rate is rigidly controlled, maximum softness will not be achieved. At temperatures above 1300°F (704°C.) the article, if worked, will develop an "orange peel" surface. At temperatures below 1100°F (593°C.), the time required to achieve the desired results increases to a point where it becomes uneconomical.

Obviously, the use of a closed furnace has certain advantages, since the temperature of the object can be more precisely controlled and the heat can be absorbed more uniformly. However, the annealing time must be established by trial and error for articles of different size and shape and for different size furnaces.

Controlling Color and Finish of Silver

It is always preferable to anneal silver- alloys in a neutral or reducing atmosphere, in order to prevent the formation of copper oxides. In addition to using a controlled

2016 Show Calendar

- ✓ **SAN GORGONIA MINERL & GEM SOCIETY**
February 12 - 21: INDIO, CA
Riverside County Fair & National Date Festival
82-503 Highway 111
Hours: 10 - 10 daily
Contact: Bert Grisham, (915) 849-1674
Email: bert67@verizon.net
- ✓ Anyone planning to go to Tucson, see **Tucson Shows on the CFMS website**. It is a thorough, exhaustive map of all the shows scattered around the town; Dates, Show, Locations, Open to, & Information January 22 - February 14.

atmosphere for annealing, the alloy can also be protected from the air by coating it with a borax flux.

When silver alloys are annealed in open air, copper oxides will form. These oxides are of two types. One, is on the upper layer with cupric oxide (CuO₂), which has a black color. Beneath the layer of the metal there may also be another oxide the cuprous oxide (CuO), which, sometimes is a reddish color that is called "fire".

The black surface layer of cupric oxide (CuO₂) can be removed by dipping the article in a "pickling solution"- a 5%-10% water solution of sulphuric acid (or Sparex, sodium bisulfate). The pickling action can be accelerated by heating the solution.

Firescale

Firescale is Cuprous oxide that is deep in the silver alloy's layer that often is not visible until the silver is polished and a purple reddish bloom of stain appears. Firescale is usually produced during soldering with a torch flame that sometimes requires heating the silver metal to high temperatures for a time to complete the solder process.

There are only two ways to remove firescale; one is mechanical (i.e. grinding it off) or two, dipping the piece in cold, 50% solution of nitric acid. Since the nitric acid bath removes silver very rapidly, the operator must carefully remove the article from the bath as soon as the fire is dissolved and rinse it immediately with water.



Upcoming Field Trips

From Field Trip Co-Chair: Chris Curtin

February 13, 2016 FIELD TRIP

AGATE VALLEY, PALMDALE

WEATHER & ROAD CONDITIONS PERMITTING

THIS TRIP WILL BE FOR CFMS MEMBERS ONLY.

Meet at 8:00 AM at McDonald's in Acton at the Crown Valley exit on the north side of the 14 Freeway. Come early if you wish and have breakfast. We will be collecting boytryoidal/bubbly agate and agate nodules.

This time of year be prepared for bad of weather.

This time of year, rattlesnakes should be hibernating, but be careful anyway, global warming and El Nino may mess up their sleep patterns. Also be aware of scorpions and black widow spiders.

DIRECTIONS: Take the 405 Freeway north to the 5 Freeway. Go north on it to the 14 Freeway and go north. From here drive about 24 miles to Crown Valley Rd. and exit. At the bottom of the offramp turn left and go under the freeway. McDonald's will be on your right. From here we will caravan to the site. If you plan on going, you must let me know ahead of time.

A field trip "Waiver of Liability" form will need to be signed by each participant on the day of the trip.

From: Chris Curtin, Fieldtrip Co-Chair
310-480-4378

STODDARD WELLS TAILGATE VICTOR VALLEY ROCK & MINERAL CLUB MARCH 11, 12 & 13, 2016 9:00 to 5:00 Daily

There is no official field trip for March since many club members prefer to visit the Stoddard Wells Tailgate.

In March the Victor Valley Rock and Mineral Club will be hosting a tailgate rock and mineral swap meet. It is close enough for a day trip, but you can also camp out and spend the weekend.

DIRECTIONS: Take the I-15 north thru Victorville toward Barstow. Turn off to the right at Bell Mountain-Stoddard Wells Road offramp and go north on Stoddard Wells Rd. at the intersection. (NOTE: DO NOT TAKE STODDARD WELLS RD. EXIT BUT THE BELL MTN.-STODDARD WELLS RD. EXIT,

WHICH IS AFTER THE STODDARD WELLS RD. EXIT.) Go 4 miles to next STOP at Dale Evans Pkwy. Continue 7 miles on Stoddard Wells Rd. to "Tailgate." Road becomes a graded dirt road about 4/10 of a mile from the Dale Evans Pkwy. intersection. Cars & RVs can make it with ease and care. "Tailgate" signs along route.

You can park at the swap meet and start browsing or if you are going to camp, drive on up past the sellers and camp at the top of the road, just next to the mountain, where the club members usually will be.

This a dry camp, so bring your own water. There are plenty of portable toilets provided by the host club. If you come up for the day, just pack a sandwich and drinks, and enjoy sampling the many home baked goods for sale by the Victor Valley Club.

MAP AVAILABLE AT: vvgmc.org/tailgate
From Chris Curtin, Co-Chair, Fieldtrips

MARCH FIELD TRIP JADE COVE, BIG SUR

Craig Polliard will be leading a field trip to Jade Cove, Big Sur, March 3, 4, & 5 to rockhound for Jade.

Camping will be at Plaskett Creek Campground. Craig & Kathy will be at site #23. Spots can be reserved at Reserve America, Plaskett Creek, they are \$25 a night Anyone interested can contact me, Craig at (310) 533-4931.

Plaskett Creek campground is right across the street from Jade Cove. All three days have favorable low tides in the afternoon when the sun is in the right place in the sky.

Reminder, this can be a very difficult climb down to the ocean, but doable. Of course all the necessary rockhounding supplies would apply, i.e. hiking shoes, water, gloves, sunscreen, etc.. My site has room for a couple of tents, per park rules. Again please feel free to call us anytime with question or concerns.....Craig & Kathy.



2016 SHOW ANNOUNCEMENTS

SBLMS "Nature's Treasures" SHOW DATES – April 2 & 3, 2016 (Setup on April 1)

MEMBER RESPONSIBILITIES FOR ANNUAL SHOW

- Sign up to work a minimum of 4 hours per day (there are many sitting jobs if health requires it). If you are able to work more hours it would be greatly appreciated. All members are required to assist with setup on Friday and breakdown on Sunday. **Opportunities to sign up are at the February and March club meetings.**
- Donate a rock or gem related raffle prize worth at least \$10. Bring your donation, along with a description of the item(s) no later than the March meeting.
- Donate two items or cash equivalent per family to our show Kitchen. Pies, cakes, brownies, fudge, cookies would be perfect. Contact Jim Erickson if you have any questions.
- Promote the show in the community. Ken & Carol have raffle tickets for club members to purchase. Raffle tickets are a great way to advertise and promote the show. Kathy Polliard also has flyers, both large and small for members to post at businesses around town.

SHOW NEWS

Artisan's Showcase – If you are interested in submitting handmade jewelry for our Artisan's Gift Shop please contact Cathe Erickson or Eugenia Dickson for details ASAP.

Show Display Cases – If you are interested in putting a display case to display your handiwork or collected treasures in the show please contact Chris Curtin. If you do not have enough material to fill a case perhaps you can share a case. Let Chris know if you need to borrow a case **or** if you have a case let Chris know if it is a slant front or upright case.

Demonstrators – We are always on the lookout for new people who might be interested in demonstrating lapidary, jewelry, and other associated arts. Please have them contact **Terry Vasseur**.

DONATIONS NEEDED FOR THE SHOW

Opportunity Prize donations – Please bring your show raffle prize donation(s) no later than the March meeting and give them Brianna Brown. The raffle prize should be rock or gem related in some way. The value of the donation should be \$10 or more. Each family is required to donate at least one item. The item should be bagged or boxed with the details of the item such as, name of the rock, location found, and your name as the donor.

Silent Auction donations – If you have any rock or jewelry related items for the silent auction bring them to the February and March meeting along with details of the item(s) and give them to Lynette or Leslie. You may also bring them to the show on set up day or first thing Saturday morning. The auction was very popular with our guests last year.

Wheel of Fortune – If you have any small rock related items you would like to donate for Wheel of Fortune prizes please bring them to our club meetings and give them to Megan Fox. Items that are a big hit with the kids are: fossils, small rocks, fool's gold, peacock ore, dino bone, petrified wood, seashells, polished stones, small apache tears, etc. The kids enjoy a variety of items on the table. Feel free to give Megan a call if you have any questions.

Magazines & Books - Start gathering your old magazines and books for the show. Rock, Lapidary and Jewelry related magazines and books sell really well but all topics are welcome. If you are donating a large amount of magazines please organize them by name if possible. Donations would be brought to the Show on Friday during set up or Saturday morning before 9:00am.

Wally Ford Scholarship table - If you have any tools, equipment, rock hounding items that you would like to donate to the Wally Ford table please contact Larry Hoskinson. Funds raised will benefit the SBLMS "Wally Ford Scholarship" set up for El Camino College Geology/Science students.

**Thank you very much for all your efforts in making this show as successful as those in past years.
It truly is a CLUB effort.**

Continued from page 4 – Green River Formation

Vast amounts of sediment were transported in the Green River area from the Rocky Mountain highlands to the intermountain basins. Mountain streams drained into lakes, forest and lake margin vegetation dropped to the ground and lake bottoms to decay while volcanic fields spewed ash into the air. These processes among others created the lithology that is found in the rocks of the area today. Sediments and associated geologic features found in the Green River Formation deposits include deltas, beaches, springs and rocks from center and near shore environments.

Samples of sandstones and oolitic grainstones are found in the Green River Formation, although fossils are generally preserved in finer-grained limestone matrix such as packstones, mudstones and siltstones. Oil shales and coals are found...remnants of the millions of years of decomposing forest vegetation. Additionally, some sediments exhibit ash layers from the then-active Absaroka and San Juan Volcanic Fields. These depositional processes along with many streams kept a steady supply of sediment flowing into the lowlands, and ultimately intermountain basin lakes. Sediment from the Green River Formation is found primarily from three of these ancient lakes, all of which represent slightly different depositional time frames, and as such, contained differing flora and fauna:

- Lake Gosiute: largest in area of the three; lower to middle Eocene
- Lake Uinta: most surface area, shallowest and existed the longest of the three; spanned most of the Eocene Epoch
- Fossil Lake: smallest, deepest and shortest-lived of the three; most abundant fossils; early Eocene

Sediment layering is evident in the Green River Formation deposits, where cyclicity is observed. Dark layers represent deposition during the growing season, while light layers were deposited during dry periods (winter). A pair consisting of a dark and a light layer is called a varve. Each varve represents an annual cycle of sedimentation (1 year). This regular, annual cyclicity of deposition, along with Chron C22r methods, radiometric dating and paleomagnetism make accurate dating of sediments possible.

Most of the nearly pristine fossils on the market and in museums Worldwide are collected from Fossil Lake deposits, which are generally separated into two distinct zones:

- Split Fish Layer: Average thickness of 6.5 feet. Abundant fossils of fish and other organisms, although diminished fossil quality due to the tendency of fossils to split between the top and bottom layers when separated. Fossils require little if any preparation.
- 18-inch Layer: Limestone varves, oil shale and volcanic ash layers representing 4000 years of deposition. Some of

the best preserved fossils in the World come from this zone, as fossils are preserved only on one sheet when layers are separated...the top layer of matrix acting as protection to the fossil. Some fossil preparation is generally required.

Fossil preservation in the Green River Formation is thought to be so complete due to a couple of ideal environmental conditions present in the lakes:

- Relatively constant deposition of sediment in calm environments: allowed for rapid burial of dead organisms or plant material, offering protection from bacteria, the elements and scavengers.
- Anoxic conditions: lack of oxygen in deeper aquatic environments prevented scavengers from disturbing dead organisms and plant material.



Green River Formation Fossil Fish showing extraordinarily-detailed preservation. From the collection of Jeff Brantley.



Procambarus primaevus Crayfish - courtesy of the National Park

(The second part of **Green River Formation** will finish up in The March issue of Agatizer)



What Ya Been Up to Lately?

The 2016 Pre-Show Meeting host by Show Chairs, Leslie & Larry



The annual South Bay Lapidary & Mineral Society show little changes from year-to-year and yet without a meeting to verify who is going to do what, it would probably end up in chaos (which, at sometimes does anyway). There are numerous positions and tasks that needs volunteers. If you are a natural born leader, we've got just the jobs you are looking for. If you prefer to do-as-you-are-told, I'm sure we can find something that suits your taste.

Muscles and strong backs are one of the characteristics we often run low on. Unfortunately, Lapidary & Mineral clubs generally have mostly more characters with bald heads and gray beards than muscles and strong backs.

So donate your pumping iron nephew and your neighbor's football center. We have plenty boxes full of rocks awaiting to exercise those flabby muscles.

See you at the show.



Circular L to L: Leslie Neff, Craig Polliard, Kathy Poliard, Terry Vasseur, Chris Curtin, Jamie Erickson, Cathe Erickson, Jim Erickson, Nancy Pekarel, Steve Pekarek, Lynette Vandever, Carol Paulely, Ken Paulely, Larry Hoskinson

South Bay Lapidary & Mineral Society, Inc.
P.O. Box 1606
Torrance, California 90505

