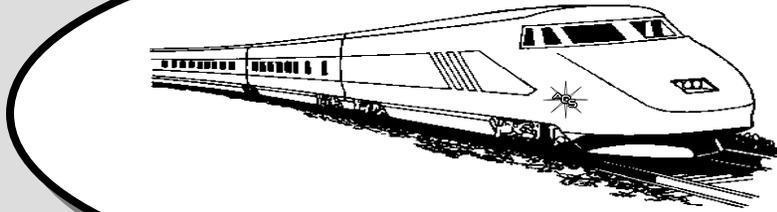


The Opal Express



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Presidents Message

By Jim Lambert

The opal show is here! We have lined up many fantastic dealers and expect it to be one of the best shows we have ever had. I would like to personally thank all the folks who have volunteered there time and energy into putting this show together. We still need some more volunteers for the front desk, so don't hesitate to step up if I don't give you a call. Any help will be greatly appreciated.

Last month's regular opal meeting was as good as, if not better than, everybody expected. We expected a great presentation from David Burton and he truly out did himself. He spoke about his mining adventures in Australia, and his slide show was very educational. I would like to extend my gratitude and appreciation to David for giving up his time to share his experiences in Australia. Hope to see everybody at the show!

Membership Rate Increase for Paper Newsletter

The American Opal Society will now charge an additional \$5 yearly fee to the yearly dues to have a paper Opal Express Newsletter mailed by postal services versus an e-mail version.

Due to recent postal and printing cost increases, the AOS Board decided to add the fee to recover these additional expenses.

We will continue to mail by post as long as members request it and are willing to pay the additional \$5 fee.

There are a number of advantages of having the newsletter e-mailed. You get a permanent electronic copy of the newsletter. Color photos and pictures can be viewed. A digital copy never wears out and can be printed over and over again. Also, they are much easier to store. A single CD could hold hundreds of newsletters.

Most of all, you eliminate paper, copying, folding, stapling, stamping, labeling, driving to the post office, etc., all of which are done voluntarily by the Editor and his helpers.

It's Here!

This Week!

The American Opal Society's 42nd Annual

OPAL & GEM SHOW

The Largest Opal Show in USA!

Sat. Nov. 7, 2009 - 10AM - 6PM

Sun. Nov 8, 2009 - 10 AM - 5PM

Opal and Gem Dealers from the USA and Australia.

Rough and Cut Opals: gemstones; jewelry & supplies.

Huge Raffle many prizes of gemstones, jewelry, tools, etc.

Free Opal Seminars on Saturday with Paid Admission.

Free Demonstrations on gem cutting, jewelry making, etc.

Brand New Location!

White House / West Wing Event Center

1238 S. Beach Blvd.

Anaheim, CA 92804

<http://whitehouseeventcenter.com>

Located at Hobby City

Contact Info: Gene LeVan

(562) 621-1805, e-mail: fineblackopal@sprynet.com

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Phone: (714) 525-7635, e-mail: jaycarey@charter.net

If you want it e-mailed, please send an e-mail to the editor, Jim Pisani, at webmaster@opalsociety.org. Please indicate your name and e-mail address that you want it mailed to.

Thanks,

Jim Pisani, Editor, American Opal Society

Raffle Donations Needed for Show

The Opal & Gem Show has a large raffle every year. This is a big fund raiser for the society. The AOS asks its members for **tax-deductible donations** for the raffle. Any extra gem, mineral; cut or rough, equipment, books, new or used, etc., would be appreciated.

We will give a tax receipt for them. Please bring them to the Show.

Members Only Website Password

To log onto the website's members only area at: http://opalsociety.org/aos_members_only_area.htm type: Name: "member" and Password: opalgem".

2009 Opal & Gem Show Dealers

Company	Proprietore
Al's Opal Imports	Yegoraw Zewdalem
AmeriAsian Business Corporation	Jeff Hao
Ananda Gems & Jewelry	Ananda Samararatne
Australian Opal	Larry Hoskinson
Australian Opal Imports	Eugene LeVan
Brian Petersen Opals and Fine Jewelry	Brain and Brandy Petersen
C - R.A.M. Associates	Reynold A. Martinez
Casa De Lumbre	Mr. Salvador R. Chavez
Custom Creative Gem Cutting	Stan McCall
De Boer's Gemstone Treasures	Andrew De Boer
Gem World, Inc.	Carolyn Roberts
Lapdiary International	David Burton
Lasco Diamond Products	Donna Schultze
Lightning Ridge Opal Co.	John Ternus
Los Laureles Opals Mex	Pedro Banuelos
Owyhee Sunset Mines	Stan Pegram
Ozzie Opals	Peter G Radtke
S.K. International	Shinko Kuramochi Lin
Santiago Canyon College	Lothar Vallot
Savings Unlimited Gems & Minerals	Dale Atkins
Starlite Jewelry	David Pickering
Stone King	Ruiqi Wong
Sunset Gems	Steven Martinez
The House of Tibara	Tim & Barbara Thomas
Tikka Opals	Matti Tikka
Toledo Fine Art Jewelry	Daniel C. Toledo
True Blue Opals Pty. Ltd.	Sally Patel
Veronique of Santa Cruz	Robert E. Redmond
Walter Johnson	Dr. Walter Johnson

An Urgent Request from Barbara McCondra

To my AOS friends,

As many of you have probably heard, the big C stage IV is wrestling me about. I'm not going down without a fight but am wise enough to know that I need to put my inventory out there quickly. Inventory such as special specimens of both The Ridge and Yowah and Koroit opals that I tucked onto bookshelves, back of drawers, and in special velvet bags for my viewing and fondling pleasure over the years. However, co-pays demanded before treatments make it necessary to sell. I can not think of a more appreciative group of opal lovers who would be interested.

This society has for 27 years when I first started coming as a guest speaker, enthusiastically encouraged me to go dig. You received my stories of the opal fields in the early days when so little was known with an absolute hunger. I was always energized to get Outback and find more opal new opal.

I am trying to put something new up each day on our parchedearthopals.com website but little medical glitches often use up our day. As I empty out cartons, buckets, suitcases and containers, some here in Texas, some still in Phoenix, the type and

quality of opal will vary. No rhyme, no reason...just getting it out there. Please do not give up on new material coming out. If I can muster extra energy I will attempt to add bits of info along with the stash.. I have for instance one of Len Cram's early 1980s tubes of his shed grown opal...the early years. I happened to meet him back then when he actually sold a few vials to people from out of the country.

I have opal books written autographed from one author to another. I have slides videos, photos and of course opal. Keep returning to my site. My health prevents me from making it to the Anaheim Show this year. But perhaps I can get some special specimens for a display to you mailed in time.

Thanks for your support and kind words and prayers. You have all always so inspired me and given me great pleasure in sharing our love and addition,

Barbara

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Oklo: Natural Nuclear Reactors

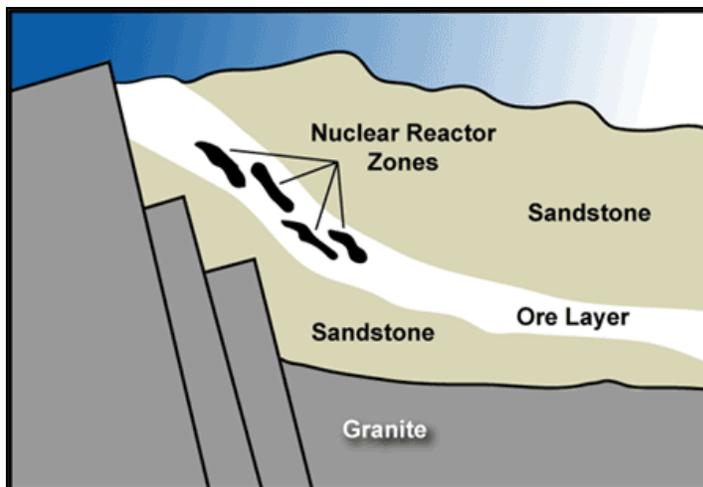
Nature showed that it could effectively contain the radioactive wastes created by the natural nuclear reactions

Creating a nuclear reaction is not simple. In power plants, it involves splitting uranium atoms, and that process releases energy as heat and neutrons that go on to cause other atoms to split. This splitting process is called nuclear fission. In a power plant, sustaining the process of splitting atoms requires the involvement of many scientists and technicians.

It came as a great surprise to most, therefore, when, in 1972, French physicist Francis Perrin declared that nature had beaten humans to the punch by creating the world's first nuclear reactors. Indeed, he argued, nature had a two-billion-year head start.¹ Fifteen natural fission reactors have been found in three different ore deposits at the Oklo mine in Gabon, West Africa. These are collectively known as the Oklo Fossil Reactors.²

And when these deep underground natural nuclear chain reactions were over, nature showed that it could effectively contain the radioactive wastes created by the reactions.

No nuclear chain reactions will ever happen in a repository for high-level nuclear wastes. But if a repository were to be built at Yucca Mountain, scientists would count on the geology of the area



The radioactive remains of a natural nuclear fission reaction that happened 1.7 billion years ago in Gabon, Africa, were held in place by the surrounding geology.

to contain radionuclides generated by these wastes with similar effectiveness.

Nature's reactors

In the early 1970s, French scientists noticed something odd about samples of uranium recovered from the Oklo mine in Gabon, West Africa. All atoms of a specific chemical element have the same chemical properties, but may differ in weight; these different weights of an element are known as isotopes. Some uranium samples from Gabon had an abnormally low amount of the isotope U-235, which can sustain a chain reaction. This isotope is rare in nature, but in some places, the uranium found at Oklo contained only half the amount of the isotope that should have been there.³

Scientists from other countries were skeptical when first hearing of these natural nuclear reactors. Some argued that the missing amounts of U-235 had been displaced over time, not split in nuclear fission reactions. "How," they asked, "could fission reactions happen in nature, when such a high degree of engineering, physics, and acute, detailed attention went into building a nuclear reactor?"

Perrin and the other French scientists concluded that the only other uranium samples with similar levels of the isotopes found at Oklo could be found in the used nuclear fuel produced by modern reactors. They found that the percentages of many isotopes at Oklo strongly resembled those in the spent fuel generated by nuclear power plants, and, therefore, reasoned that a similar natural process had occurred.⁴

Uranium isotopes decay at different levels

The uranium in the Earth contains dominantly two uranium isotopes, U-238 and U-235, but also a very small percentage of U-234, and perhaps small, undetectable amounts of others. All of these isotopes undergo radioactive decay, but they do so at different rates. In particular, U-235 decays about six-and-a-third times faster than U-238. Thus, over time the proportion of U-235 to U-238 decreases. But this change is slow because of the small rates of decay.

Generally, uranium isotope ratios are the same in all uranium ores contained in nature, whether found in meteorites or in moon rocks. Therefore, scientists believe that the original proportions of these isotopes were the same throughout the solar system. At present, U-238 comprises about 99.3 percent of the total, and U-235 comprises about 0.7 percent.⁵ Any change in this ratio indicates some process other than simple radioactive decay.

Calculating back to 1.7 billion years ago—the age of the deposits in Gabon—scientists realized that the U-235 there comprised about three percent of the total uranium. This is high enough to permit nuclear fissions to occur, providing other conditions are right.⁶

So how did nuclear reactions occur in nature?

Deep under African soil, about 1.7 billion years ago, natural conditions prompted underground nuclear reactions. Scientists from around the world, including American scientists have studied the rocks at Oklo. These scientists believe that water filtering down through crevices in the rock played a key role. Without water, it would have been nearly impossible for natural reactors to sustain chain reactions.

The water slowed the subatomic particles or neutrons that were cast out from the uranium so that they could hit-and split-other atoms. Without the water, the neutrons would move so fast that they would just bounce off, like skipping a rock across the water, and not produce nuclear chain reactions. When the heat from the reactions became too great, the water turned to steam and stopped slowing the neutrons. The reactions then slowed until the water cooled. Then the process could begin again.⁷

Scientists think these natural reactors could have functioned intermittently for a million years or more. Natural chain reactions

stopped when the uranium isotopes became too sparse to keep the reactions going.

What happened to the nuclear waste left at Oklo?

Once the natural reactors burned themselves out, the highly radioactive waste they generated was held in place deep under Oklo by the granite, sandstone, and clays surrounding the reactors' areas. Plutonium has moved less than 10 feet from where it was formed almost two billion years ago.⁸

Today, manmade reactors also create radioactive elements and by-products. Scientists involved in the disposal of nuclear waste are very interested in Oklo because long-lived wastes created there remain close to their place of origin.

The Oklo phenomenon gives scientists an opportunity to examine the results of a nearly natural two billion-year experiment, one that cannot be duplicated in the lab. By analyzing the remnants of these ancient nuclear reactors and understanding how underground rock formations contained the waste, scientists studying Oklo can apply their findings to containing nuclear waste today. The rock types and other aspects of the geology at Oklo differ from those at Yucca Mountain. But this information is useful in the design of a repository at Yucca Mountain. Were the Oklo reactors a unique event in natural history? Probably not. Scientists have found uranium ore deposits in other geological formations of approximately the same age, not only in Africa but also in other parts of the world, particularly in Canada and northern Australia. But to date, no other natural nuclear reactors have been identified.

Scientists believe that similar spontaneous nuclear reactions could not happen today because too high a proportion of the U-235 has decayed. But nearly two billion years ago, nature not only appears to have created her first nuclear reactors, she also found a way to successfully contain the waste they produced deep underground.

The radioactive remains of natural nuclear fission chain reactions that happened 1.7 billion years ago in Gabon, West Africa, never moved far beyond their place of origin. They remain contained in the sedimentary rocks that kept them from being dissolved or spread by groundwater. Scientists have studied Yucca Mountain to see if the geology there might play a similar role in containing high-level nuclear waste.

References

- 1 Cowan, G. A. 1976. "A Natural Fission Reactor," Scientific American, 235:36.
- 2 Smellie, John. "The Fossil Nuclear Reactors of Oklo, Gabon," Radwaste Magazine, Special Series on Natural Analogs, March 1995:21.
- 3 "A Prehistoric Nuclear Reactor," Chemistry, January 1973:24.
- 4 Smellie, 21.
- 5 Cowan, 41.
- 6 Smellie, 21.
- 7 Cowan, 39.
- 8 Cowan, 39.

Note: In 1956 while at the University of Arkansas, Dr. Paul Kuroda described the conditions under which a natural nuclear reactor could occur. When the Oklo reactors were discovered in 1972, the conditions found there were very similar to his predictions. Dr. Kuroda now lives in Las Vegas, Nevada where he has been a scientific resource for the United States Department of Energy.

From <http://www.ocrwm.doe.gov/factsheets/doeymp0010.shtml>

Nevada Opal: Part I, Virgin Valley By Chris "The Prospector" Ralph

Nevada has produced some very beautiful opals: This is Part I covering the famous Virgin Valley deposits...

Nevada is famous for its beautiful, colorful black Opal. The state contains some very rich precious opal beds and has produced some spectacular and extremely valuable specimens. The Virgin Valley opal beds in northwest Humboldt County are perhaps the



Virgin Valley Precious Opal

most famous gemstone locality in Nevada. High quality precious opal emitting a multihued rainbow of color is found replacing wood or other plant material in this remote location.

The Virgin Valley Opal field is in an isolated desert area south of Highway 140 about 25 miles

southwest of Denio. Precious opal was first discovered here in 1905 and a number of claims were located at that time. Exploration of these deposits has been continued intermittently by various parties since that time. The opal field lies within an area approximately 5 miles wide and 10 miles long in certain beds outcropping along the walls and slopes of Virgin Creek Valley.

The formations here consist of volcanic ash tough and mud originally deposited in shallow lakes. The sediments are in part overlain by lava flows. The sedimentary beds have been divided into upper middle and lower divisions the upper beds contain fossil remains in the form of bones and teeth of mastodon camels and other fauna while the middle beds contain silicified wood and plant remains is principally in these middle beds that the opal occurs in the form of wood casts. These productive beds are buried by overburden sometimes as much as 100 feet thick. Many of the plant remains in the opal beds are only partly replaced by silica and still contain considerable carbonaceous material. Precious opal is sparsely and irregularly distributed throughout the deposit, but comprises only a very small part of it.

Much of the early day mining was conducted underground, but modern workings are done principally by bulldozer. Small to medium-sized open pits working around the exposed areas of the productive beds are typical of the district. Often, or the overburden becomes to deep to easily remove, the workings end.



Petrified Wood with Precious Opal

Many opal experts consider the Virgin Valley material to be some of the best, brightest and most beautiful opal yet discovered. The Virgin Valley deposits produce a wide variety material from intensely colored crystal opal to some of the world's finest black opal. Brilliant flashes of red, blue, yellow, green and all the rest of

the rainbow emanate from these spectacular gems. Most Virgin Valley rough has color through out the stone (or a part of the stone). The color does not seem to occur in discreet bands like the opal from Spencer, ID and some Australian rough. Unfortunately, Virgin Valley Opal is also famous for its regrettable tendency to crack. All opal contains a certain percentage of water, and the Virgin Valley Opal has an unusually high water content often ranging from 10 to 13 % by weight. This leads to a very undesirable tendency for the Virgin Valley opal to slowly dry out, lose its brilliant colors and eventually crack. Most Virgin Valley precious opal gems will eventually fail, but not every piece of Virgin Valley Opal is destined to dehydrate and crack. Again unfortunately, it is impossible to tell simply by looking the potential for any certain piece to self-destruct.

A large number of techniques have been tried to preserve the Virgin Valley Opal, and prevent it from cracking including various techniques to allow it to "age" and dry slowly. Many different attempts by a variety of individuals with all kinds of different methods and techniques to slowly dry, treat and otherwise prevent the opal from cracking under normal conditions. However the cracking is not a matter of a quick shock. Because the water is an integral part of the gem, once enough water has been lost, the stone will fail – no matter how slowly the water is lost.

Since the Virgin Valley opals were discovered more than a century ago, loads of folks have claimed all kinds of great things as far as success in preventing them from cracking. None of these techniques have ever been proven to work over the long term. If they did, it would be big news in the gem industry as some of the Nevada opal is really colorful and they would certainly be much more valuable if they were more durable. Only those methods which

fully submerge or encase the stone, preventing it from losing water, have proven reliable in the long term. Unfortunately, these do not go well with the use of this opal in jewelry. In reality, any jewelry made from Virgin Valley Opal should not be worn daily, but should worn only on special occasions, and otherwise be kept under water in order to delay dehydration as long as possible. Much of the Virgin Valley material is actually not cut into gemstones, but is simply preserved under water as a spectacular rough gem specimen.



Layer of precious opal on petrified wood

Virgin valley also has tremendous amounts of common opal. Not all of this is formed after casts of wood as the precious material is. Perhaps the best known and most valuable of the non-precious material is a golden colored translucent opal. The Common opal from the Virgin Valley area has none of the tendency to crack that the precious material does.

There are areas at Virgin Valley which are open to rockhounds who would like to pay to dig for the fiery precious black opal. You have a couple of different options, tailings diggings or bank diggings. At one mine you may dig directly in the bank, while another they will dig up a section of bank, and haul the freshly dug material in for you to search through. You end up working through the opal bearing material in a safe location, and this eliminates exposing the bigger to any dangers of caving at the bank face.

At the time of this writing, the three areas open for rock hounds are:

1. **Rainbow Ridge Mine** - <http://www.nevadaopal.com/>
2. **Royal Peacock Opal Mine** - <http://www.royalpeacock.com>
3. **Bonanza Opal Mine** - <http://www.bonanzaopals.com>



Virgin Valley Black Opal in water

I've always done better with the opal tailings than I have done digging in the bank - The bank digging is like the gambling with the Nevada slot machines - either hit it big or you get dang near nothing. People can and do find opal branches and logs worth \$10,000 and more. I've dug in the banks and it is kind of a crapshoot - prospecting is just like that. You can pick up small but usable opal pieces with nice color off the dumps, but any real

impressive stuff comes from digging in the banks. On the other hand, you can dig in the virgin bank for 3-4 days and find pretty much nothing. After all that digging someone else may come in and dig for 30 minutes in the bank just 2 feet away from your spot and find a piece worth several thousand dollars. You just never know. As an example, on the last day I dug into the bank, there were about a dozen of us and only one guy had really found something nice (a nice colorful opal limb cast), a few more found some nice small pieces, similar to what might be found in the dump. The rest of us got nothing. Opal digging presents an opportunity to find a very high dollar specimen - if you are lucky. However there are no guarantees that you will find anything - it is not easy. In addition, the fees to dig in virgin bank run material are much greater than those charged for sorting through the dump material.

There are no free areas open to precious opal prospecting and collecting by rock hounds that do not wish to pay for access. Hundreds of active mining claims blanket the entire area and the owners do not take kindly to trespassers. The pay to dig fees at Virgin Valley are generally much higher than would be experienced and many other pay-dig sites open to rockhounds. Productive mining in Virgin Valley requires the removal of overlying barren beds, which can be quite deep, requiring the use of a bulldozer or other heavy equipment, and the operating costs for this type of equipment is not cheap. There is also always the chance that you will strike a fantastic find and come up with a \$50,000 precious opal log.

The road into the opal area is not paved, and a high clearance vehicle is needed to drive right into the opal mine areas themselves (however, a four wheel drive vehicle is not necessary). There are few gas stations or other sources for supplies in the general area - it is important to be self-sufficient in this wild and remote region of northern Nevada.

While there is no free digging in the opal beds, there is a fair amount of free camping in the area. A nice free campground with shower and pool is located at McGee hot springs. There are also plenty of things to do, and a number of recreational activities in the Virgin Valley area. There are several stocked ponds in the Valley available for fishing. There is sport hunting for Mule Deer and Antelope in their season. There is a naturally heated swimming pool at McGee Hot Springs. There are also caves to explore, fossil fields, and rock hunting for agates, petrified wood and other gems (besides precious opal). A special wild life refuge is not far away. There is no question that the Virgin Valley area is a very interesting one to visit and explore.

Next Month, see Part II: Nevada Opal Deposits in the Rest of the State.

From <http://nevada-outback-gems.com>

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News from the Opal Diggin's

By Steve Newstrom
The Village Smithy Opals
<http://villagesmithyopals.com>



Coober Pedy Opal Fields

Made a 3 week tour to Australia in May this year. Stopped in New Zealand first for a 3 days to see an old friend and his wife...had a wonderful time... thanks John & Gail!! First stop in Australia was Brisbane to pick up a rental campervan. Then the GPS unknowingly came unplugged and I spent 2 hours lost on a Brisbane motorway in a busy construction zone during rush hour. Two days later I made it to the Grawin Opal Diggings near Lightning Ridge. Found some VERY nice gemmy black seam opal, China hat nobbies and some very bright smaller material that will cut small cabs at a very good price. The material was hard to come by and the price was dear. But never-the-less I spent a delightful Sunday afternoon at the Grawin "Pub in The Scrub" looking at opal parcels and eating a hamburger "with the lot"...tomato, lettuce, onion, fried egg and slice of pineapple...an acquired taste :-)) .. Rains forced me out of the area early and I was lucky to get away when I did, as roads closed soon after I left. Made the long 3 day trek from Lightning Ridge to Coober Pedy via Broken Hill and Port Augusta.

The new iron, copper, gold and uranium ore mines near Coober, paying great wages, have taken most of the younger opal miners away from the mines. Opal was VERY hard to find and prices discouraging. But I was fortunate to find a couple nice sized parcels and several small parcels. What with young miners going to the ore mines and baby boomer miners retiring, I would guess that more than half the opal miners I'd known 5 years ago are no longer mining opal. Australian opal production is looking bleak.

So the new Wello opal discovery in Ethiopia has come at a very opportune time. Darlene and I are planning an opal safari to Ethiopia to see the new Wello deposit and return with more delightful gems. Sounds like a very interesting country to see from the high mountainous regions, to diverse African wildlife and many scenic national parks. Yes...a new opal endeavor in a distant and intriguing country!!

From Volume 1 Village Smithy Opals

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Back to the Basics: Opal-Cutting Review

By Steve Newstrom
The Village Smithy Opals
<http://villagesmithyopals.com>

Inspection: Carefully inspect your opal before you begin cutting. Hold the stone alongside the edge of a strong light so that the light

shines into the opal without shining into your eyes. Check the opal for cracks and inclusions, especially sand pockets. Use a thin saw to cut around imperfections...don't grind off material and waste it...you may need the small pieces for accent stones or chips for vials. Continue checking for imperfections during work, as grinding may expose hidden cracks or pockets.



Rough Opal

Grinding: The only reason for mentioning grinding is to warn of using too coarse a wheel for opals. 80 or 100 grit grinding wheels cut material very fast but leave DEEP scratches, which may not be seen until you are into the polish stage. Course grit wheels dig much deeper than a 220 or 320 grit wheel and more much material must be removed to smooth out these deep scratches. Opals are soft and a 220 grit or 320 grit grinding wheel will suffice for course grinding.

Sanding: As a rule for progressive sanding steps, double the grit number for your next smoothest sanding cloth. I go from 320 sanding to 600 grit to 1200 grit to 3000 grit for pre-polish. Cross contamination is a danger especially in the finer grits. Be especially careful of your 1200 & 3000 grit wheels. Wash your hands and stone before changing to a new belt. I usually use diamond, but have found that 600 grit silicon carbide belts work and wear well and are inexpensive. Shaping done on too course of a sanding wheel is the major cause of flat spots. Sand/shape on a 600 grit diamond belt or for very small stones use 1200 grit to smooth flat spots.

Polishing: It is hard to teach old dog new tricks! I still use a cerium oxide/Linde A mix on leather. Clean your stone and hands thoroughly. Try not to touch polishing wheels when not in use and warn others. Keep spare leather disks in plastic bags and don't be afraid to change them when you see scratches.

From Volume 1 Village Smithy Opals

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Another view on cutting opals – The Editor



Opal glued to a nail dop

Shaping and Finishing Opal Jack's Cabbing Technique

By Jack Slevkoff

I use a "flat lap" machine with variable speed. Some people use the vertical wheels like the "Genie" or "Pixie". Some don't want to spend the money and, therefore, purchase a "Spool Polisher." Flat lap machines and vertical wheel machines

having a range of at least 180 to 600 mesh grits plus final polish are best, in My opinion, for grinding and shaping the stone and quickly getting rid of the unwanted material. I like flat lap machines that have speed controls so that I can control the speed which is very important when grinding softer stones like opals. Whereas, the Spool Polisher is mainly utilized for the latter stages of finishing a stone. One cannot grind quickly with a Spool Polisher like one does with 60 to 180 mesh wheel or flat lap. But if one does not have the money for the other machines, by all means, buy the Spool polisher. When one uses the phrase "cut and polish" or "cut opal", it does not mean literally "cut", like with a saw. The term "cut" refers to the grinding process to shape a stone.

THE PROCESS

1. Use a trim saw with a thin blade to cut out the opal area desired on large pieces if:
 - a. It *cannot* be used as one whole piece, or
 - b. To obtain a certain size.
2. Use the trim saw also to trim off large areas of waste or excess material. Some of the cutoff remnant pieces can also be shaped and finished. Always apply water to cool down the stone and blade and to wash away the debris.
3. Get rid of all remaining unwanted material on the stone by the grinding process using diamond laps or wheels. Always apply water to cool down the stone and to wash away the debris. Start with 180, 220, 240, or 260 mesh grit for quick removal and shaping into a preform.
4. If you are going to use dops, prepare the dopping surface of the opal so that the dop will fit securely in place. Most preparation consists of developing an almost flat area and working it with 600 mesh grit. If you are planning on polishing the backside or underside of the stone, be sure it has some curvature to make it easier to polish.
5. I usually set up about 30 stones to do at one time.
6. Some of the smaller ones are put on top of nails (shape the nail heads for best fit) and attach by using a minimal amount of "Goop" and let set over night. The opal can be removed later by applying a candle flame to the nail shaft nearest the nail head but be sure flame does not touch the opal. Heat until opal can be easily removed.
7. "Goop" can be obtained from a hardware store.
8. When using a flat lap machine, use a **5" Dish Lap** (600 or 1200 mesh) for final shaping before the sanding process. Use lower speed on machine. Again, always apply water to cool down the stone and to wash away the debris. Use certain parts of the dish that best fits the curved surface desired. Learn to twirl, swirl, and rotate the stone at different angles on the dish's surface. This technique will give a better uniform curved surface.
9. I make my own sanding disks for My flat lap machine.
 - a. Use any round disk (metal, wood, or plastic or whatever) with a 1/2" hole in the center.
 - b. Attach a 1/8" to 1/4" thick medium soft rubber backing material ("closed-cell" preferred and cut to match disk) to the disk using water resistant glue or "3M Feathering Adhesive". Or, you can purchase Foam Pads PSA backed Those labeled "PSA" already have a Pressure Sensitive Adhesive to hold the foam in place...all you have to do is peel off the paper backing and apply to a clean surface.
 - c. Attach 600 or 1200 mesh grit wet/dry sandpaper (cut, to match disk) to the rubber backing material after applying "3M Feathering Adhesive" to the top surface of the rubber backing material. Wait till the adhesive has dried and is slightly tacky (about 20 minutes) before applying the sandpaper.
10. The sand paper is initially too rough at first, so use something you are not afraid to grind down on. Eventually the grit on the

sandpaper wears out and this is where it really comes into play. Stop applying water. Apply dabs of 1200 mesh "diamond compound" in various spots on the used, pliable sandpaper. Apply your stone to the surface where the compound has been placed pressing lightly and gently allowing the compound to spread over and across the lap while rounding off and finalizing all of the stone's surfaces. Get rid of all flats and scratches. I never go to the final polishing stage until I am satisfied with all of the surfaces of the stone. Apply more compound if need be. If it gets too dry or starts to grab the stone, apply a little clean water while working the stone. Too much water will wash away the compound. Use this sandpaper until it starts to come apart. Then make another one.

11. For polishing, I again make my own disks the same way as the sanding type but instead of sandpaper, I attach a "SPECTRA" ULTRALAP to the rubber backing material in the same manner the foam or rubber backing material was attached. Use very clean water and allow it to slightly drip during this process just to dampen the material but not flood it. It is good to have some friction during this process which aids in the polishing of the surfaces. Bear down on this process to some degree, but not



Opals on dops

enough to touch the hard disk below the rubber or too much force that causes the stone to come off the dop. Always keep the stone moving at all times in any process so as not to get any part of the stone hot. Heat will destroy opals when not careful. Polish until you are satisfied that there are no scratches or unpolished areas. Improve your techniques with experience. ENJOY!!

Not all opals can be shaped into rounds or ovals, so use your imagination and good eye for shaping them into interesting objects of beauty at the same time considering maximum yield.

You don't have to use or stick with Jack's method. Develop your own and enjoy being creative, clever, and resourceful. If you have a better way, we want to hear about it.

From <http://www.gemworld.com/HowToCutOpals.ASP>

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November 2009 Gem & Mineral Shows

From Rock & Gem Magazine

*More shows can be found at
<http://www.rockngem.com/showdates.asp>*

- 30-1--SANTA ROSA, CA: Gem Faire; Gem Faire Inc.; Sonoma County Fairgrounds/Grace Pavilion, 1350 Bennett Valley Rd.; Fri. 12-7, Sat. 10-6, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com
- 3--SANDIEGO, CA: Wholesale show; Rings & Things; Mission Valley Resort Hotel (Ballroom), 875 Hotel Circle S; Tue. 1-5; contact Dave Robertson, (800) 366-2156; Web site: www.rings-things.com/Show/
- 4--BUENA PARK, CA: Wholesale show; Rings & Things; Knott's Berry Farm Resort Hotel, 7675 Crescent Ave.; Wed. 1-5; contact Dave Robertson, (800) 366-2156; Web site: www.rings-things.com/Show/
- 6-8--POMONA, CA: Show, "Jewelry, Gem, & Variety Expo"; Green New Media & Life Expo Inc.; Pomona Fairgrounds Fairplex, 1101 W. McKinley Blvd., Bldg 7; Fri. 12-6, Sat. 10-7, Sun. 10-5; adults \$14, seniors two for \$14,

- children under 12 free; book signing, speakers, demonstrations; contact G. Fisher, (702) 467-9411; e-mail: GEFisher39@aol.com; Web site: www.GreenNewMediaLifeExpo.com
- 7--SAN MATEO, CA: Wholesale show; Rings & Things; Sat. 12-4; San Mateo Co. Expo Center (Expo Center Meeting Pavilion), 2495 S. DE St.; contact Dave Robertson, (800) 366-2156; Web site: www.rings-things.com/Show/
- 7--TUCSON, AZ: 8th annual silent auction; Old Pueblo Lapidary Club; 3118 N. Dale; Sat. 9-2; free admission; contact Danny Harmsen, (520) 323-9154
- 7-8--AMARILLO, TX: Show; Golden Spread Gem & Mineral Society; Amarillo Civic Center, 401 S. Buchanan; Sat. 10-6, Sun. 10-5; dealers, demonstrations, exhibits, door prizes, wheel of fortune, silent auction, 43-pound sapphire display; contact Dee Hawkins, 108 S. Polk St., Amarillo, TX 79101, (806) 681-0960
- 7-8--ANAHEIM, CA: 42nd annual Opal and Gem Show; American Opal Society; White House/West Wing Event Center, Hobby City, 1238 S. Beach Blvd.; adults \$3, children under 15 free; contact Gene LeVan, (562) 208-7494; e-mail: genea01@sprynet.com
- 7-8--CONCORD, CA: 50th anniversary show; Contra Costa Mineral & Gem Society; Centre Concord, Clayton Fair Shopping Center, 5298 Clayton Rd., near Ygnacio Valley Rd.; Sat. 10-5, Sun. 10-5; adults \$5, youth under 16 and Scouts in uniform free with adult; 19 vendors, minerals, fossils, gems, crystals, jewelry, books, tools, equipment, lapidary supplies, 60 exhibitors, 12 demonstrators, beading, wire-wrapping, faceting, stone carving, fluorescent displays, silent auction, prizes, youth activities, 5,000-pound polished jade rock, 65 million-year-old ice age cave bear, woolly mammoth skull, discount coupons via e-mail; contact Harry Nichandros, P.O. Box 4667, Walnut Creek, CA 94596, e-mail: show2009@ccmgs.org; Web site: http://ccmgs.org
- 7-8--EDMONDS, WA: Annual fall show; Maplewood Rock & Gem Club; Maplewood Clubhouse, 8802 196th St. SW; Sat. 9-5, Sun. 9-4; free admission; display cases, demonstrators, kids' games, club sales, no dealers, raffles; contact Bev Ryder, 4625 Strumme Rd., Bothell, WA 98012, (425) 338-4184; e-mail: famryd@aol.com; Web site: www.maplewoodrockclub.com
- 7-8--LANCASTER, CA: Show, "Rock 'N' Gem Roundup"; Palmdale Gem & Mineral Club; Antelope Valley Fairgrounds, 2551 W. Ave. H; Sat. 9-5, Sun. 9-5; free admission; dinosaur programs, field trip Sun., silent auction, lapidary displays, Country Store, raffle, more than 25 dealers; contact Susan Chaisson-Walblom, 42122 52nd St. W; Quartz Hill, CA 93536, (661) 943-1861; e-mail: slchaisson@yahoo.com; Web site: http://palmdalegemandmineral.com
- 7-8--NY, NY: Fall Show; NY Mineralogical Club; Holiday Inn Midtown, 440 W. 57th St., between 9th Ave. and 10th Ave.; Sat. 10-6, Sun. 11-5; adults \$6, children under 12 free; lectures, mineral specimens, fossils, faceted stones, cabochons, beads, finished jewelry; contact Excalibur Mineral Corp., 1000 N. Division St., Peekskill, NY 10566, (914) 739-1134; e-mail: tony@excaliburmineral.com
- 7-8--SAN DIEGO, CA: Show, "GemDiego"; San Diego Mineral & Gem Society; Al Bahr Shrine, 5440 Kearny Mesa Rd.; Sat. 9:30-5, Sun. 10-4; free admission; dealers, gems, minerals, equipment, fossils, crystals, jewelry, carving, beads, tools, slabs, rough cutting material, books, free exhibits, door prizes, free demonstrations, gemstone faceting, chains, chain making, free gem identification, field trip information; contact Bob Hancock, 1815 Sweetwater Rd. NR 83, Spring Valley, CA 91977, (619) 889-6886; e-mail: rhobhancock@cs.com; Web site: www.sdmg.org
- 8--McCLELLAN (SACRAMENTO), CA: Wholesale show; Rings & Things; Lion's Gate Hotel Sacramento (Garden Pavilion), 3410 Wover St.; Sun. 1-5; contact Dave Robertson, (800) 366-2156; Web site: www.rings-things.com/Show/
- 13-15--COSTA MESA, CA: Show, "West Coast Gem & Mineral Show - Fall"; Martin Zinn Expositions; Holiday Inn - Bristol Plaza, 3131 S. Bristol; Fri. 10-6, Sat. 10-6, Sun. 10-5; free admission; 80 wholesale and retail dealers, open to the public; contact Martin Zinn Expositions, P.O. Box 665, Bernalillo, NM 87004-0665, fax (505) 867-0073; e-mail: mz0955@aol.com; Web site: www.mzexpos.com
- 13-15--SACRAMENTO, CA: Show, "Sacramento Harvest of Gems"; Sacramento Mineral Society; Scottish Rite Temple, 6151 H St.; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$5, students and children \$1; kids' scavenger hunt, speakers, rocks, gemstones, fossils, mineral specimens; contact Kevin Beguhl, 8516 Madison Ave., Fair Oaks, CA 95628, (916) 967-4000; e-mail: kevin@katerinas-treasures.com; Web site: www.sacramentomineralsociety.com
- 14-15--VICTORVILLE, CA: Annual fall show; Victor Valley Gem & Mineral Club; San Bernardino County Fairgrounds, 14800 7th St.; Fri. 9-5, 9-5; free admission; open to the public, more than 20 vendors, gemstones, finished jewelry, wire wraps, findings, fossils, minerals, rough, cab and slab materials, displays, exhibits, live demonstrations, hourly door prizes, end-of-show raffle,

silent auction, kids' grab bags, Scout geology seminars; contact Virgil Melton, (760) 900-0507; Web site: www.VVGMC.org

14-15-YUBA CITY, CA: 18th annual show, "Festival of Gems & Minerals"; Sutter Buttes Gem & Mineral Society; Franklin Hall, Yuba-Sutter Fairgrounds, 442 Franklin Ave.; Sat. 9-5, Sun. 9-4; free admission; children's spinning wheel, grab bags, silent auction, dealers, exhibits; contact Bruce Roberts, P.O. Box 360, Browns Valley, CA 95918, (530) 675-2864; e-mail: inez_brg@yahoo.com

20-22-SAN FRANCISCO, CA: Gem Faire; Gem Faire Inc.; Fort Mason Center/Herbst Pavilion, Landmark Building A; Fri. 12-7, Sat. 10-6, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

21-22-oxnard, CA: 40th annual show, "Galaxy of Gems Expo"; Oxnard Gem & Mineral Society; Oxnard Performing Arts Center, 800 Hobson Way; Sat. 9-5, Sun. 10-4; free admission; 70 display cases, kids' games, "Pebble Pup" quiz, lapidary demonstrations, silent auction, gems, minerals, American opals, fossils, stone beads, silver craft, finished jewelry, tools, lapidary supplies, books; contact Norb Kinsler, (805) 644-6450; e-mail: show_info@oxnardgem.com; Web site: www.oxnardgem.com

21-22-WEST PALM BEACH, FL: 43rd annual show; Gem & Mineral Society of the Palm Beaches; Americraft Expo Center, South FL Fairgrounds, 9067 Southern Blvd.; Sat. 9-6, Sun. 10-5; adults \$7, children under 12 free; gem mining, fossil dig, exhibits, demonstrations, door prizes, Chinese auction; contact Barbara Ringhiser, (561) 588-5458; e-mail: bar5678@aol.com; or Ellen Jean, (931) 372-8236; e-mail: ellenjean24@charter.net; Web site: www.gemandmineral.cc

28-29-MONTEREY, CA: Gem Faire; Gem Faire Inc.; Monterey County Fairgrounds, 2004 Fairground Rd.; Sat. 10-6, Sun. 10-5; free admission; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

28-29-SAN FRANCISCO, CA: Show, "The Great San Francisco Crystal Fair"; Pacific Crystal Guild; Fort Mason Center, Bldg. A, Laguna and Marina Blvd.; Sat. 10-6, Sun. 10-4; adults \$6, children under 12 free; gems, jewelry, crystals, beads, psychics; contact Jerry Tomlinson, (415) 383-7837; e-mail: sfxtl@earthlink.net; Web site: www.crystalfair.com

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INTERNATIONAL MEMBERSHIP FEE (All addresses <u>outside</u> of USA)		\$10	
PRINTED NEWSLETTER FEE (Paper copy postal mailed instead of PDF file by e-mail)		\$5	
ADDITIONAL BADGES (Your First Badge is <u>free</u> when joining)		\$10	
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Please make check or money order payable to "**American Opal Society**". Mail payment and application to:

American Opal Society; PO BOX 4875; Garden Grove, CA 92842-4875

An optional, quicker method of payment is via the **Internet**. To pay, just visit the membership page on our website at http://opalsociety.org/aos_application_by_web.htm and complete the form. You may pay with a **Credit Card** or via **PayPal** account. The transaction is completely secure and the AOS never sees your credit card number. The AOS PayPal account is membership@opalsociety.org.

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MEMBERSHIP ROSTER: The AOS publishes a membership directory once per year in its Newsletter, the *Opal Express*. Your name will be included. Please check what additional personal information that you want listed for other members. If it is different from the information above, please note that on the application.

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Are Your Dues Due Now?

PLEASE CHECK YOUR ADDRESS LABEL. If your label shows the current month/year your dues are **DUE NOW**. If the date is older, your dues are overdue.

A Renewal Grace Period of two months will be provided. If your dues are due now you will receive two additional issues of the newsletter. Please note, however, that as the system is now set up, if your renewal is not received you will be **AUTOMATICALLY** dropped from membership thereafter. It is your responsibility to assure your dues are current.

Thank you,
The Editor



The Opal Express

American Opal Society
P.O. Box 4875
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**Volume #42 Issue #11
November 2009**

TO:

Some Topics In This Issue:

- Rate Increase for Paper Newsletter
- Raffle Donations Needed for Show
- 2009 Opal & Gem Show Dealers
- Urgent Request - Barbara McCondra
- Oklo: Natural Nuclear Reactors
- Nevada Opal: Part I, Virgin Valley
- News from the Opal Diggin's
- Opal-Cutting Review
- Shaping and Finishing Opal

Important Dates:

Nov. 7 & 8 Opal & Gem Show

Nov. 12 General Meeting

Nov. 7 & 8 Opal & Gem Show!

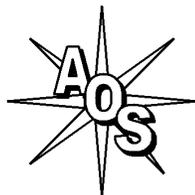
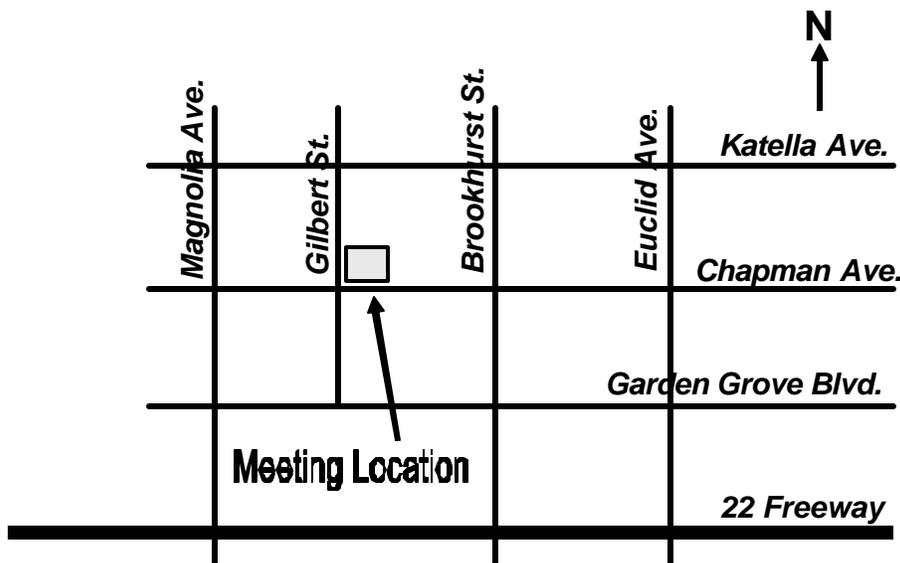
— GENERAL MEETINGS —

2nd Thursday of the Month
7:00 pm - 9:00 PM

Garden Grove Civic Women's Club
9501 Chapman Ave.
Garden Grove, CA 92841
(NE corner of Gilbert & Chapman)

MEETING ACTIVITIES

Opal Cutting, Advice, Guest Speakers,
Slide Shows, Videos, Other Activities



The American Opal Society

<http://OpalSociety.org>

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