

# .The Opal Express

American Opal Society  
P.O. Box 4875  
Garden Grove, CA 92842-4875



**Volume #37 Issue #10  
October 2004**

*Some Topics In This Issue:*

**Important Info:**

**Board Meeting  
October 11<sup>th</sup>**

**General Meeting  
October 14<sup>th</sup>**

TO:

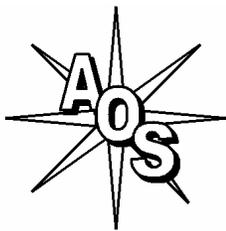
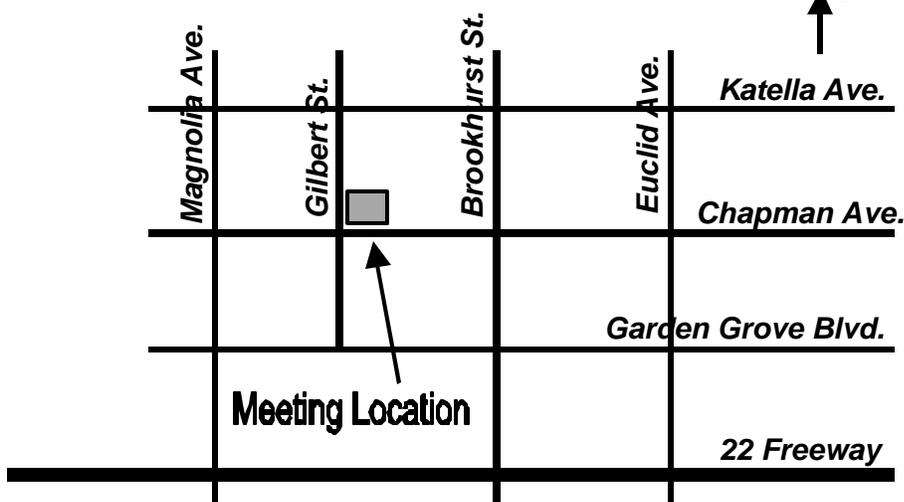
## Oct. 14th - General Meeting

— **GENERAL MEETINGS** —

2nd Thursday of the Month  
7:00 pm - 9:00 PM  
Garden Grove Civic Women's Club  
9501 Chapman Ave.  
(NE corner of Gilbert & Chapman)  
Garden Grove, CA

**MEETING ACTIVITIES**

Opal Cutting Advice Guest Speakers  
Slide Shows Videos Other Activities



## The American Opal Society

<http://opalsociety.org>

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Jim Pisani	Editor & Webmaster	(562) 797-5239	email: webmaster@opalsociety.org

# American Opal Society Membership Renewal

Thank you for continuing to support your American Opal Society!

TYPES OF MEMBERSHIP		DUES / FEES)	AMOUNT PAID
<u>DUES:</u> <u>SELECT ONE</u>	All <u>US</u> Addresses including Alaska and Hawaii	\$25.00	
	<u>International Members</u> = All addresses <u>outside</u> of US Addresses	\$30.00	
<u>ADDITIONAL BADGES</u> = \$5.00 each (First Badge <u>free</u> when joining)		\$5.00	
<u>ONE TIME INITIATION FEE</u> = All <u>New</u> members		\$10.00	
<u>SENIOR DISCOUNT</u> = Age 65 or over deduct \$5.00		-\$5.00	
<b>TOTAL PAID – DUES, less Senior Discount plus Badge plus Initiation Fee (if Applicable)</b>			

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** using **PayPal.com**. To pay, just log onto your PayPal account and "Send Money" to the AOS account, **webmaster@opalsociety.org**. There is no transfer charge!

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PHONE: Home ( )	Business ( )	FAX ( )	
E-MAIL	WEBSITE		
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HOBBIES AND INTERESTS:			

**NAME BADGE ORDER FORM:**  
PLEASE PRINT NAME AS YOU WISH IT TO APPEAR ON YOUR BADGE using up to two (2) lines of text for your name, nickname, or name of your opal related business.

**MEMBERSHIP ROSTER & DEALERS LIST:** 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.

Address     Phone     E-mail     Website

Include my name & address on a list provided to the Dealers selling at our Annual Opal & Gem Show.

Please sign here: \_\_\_\_\_ Date \_\_\_\_\_

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**Editor-Jim Pisani**

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## Are Your Dues Due Now?

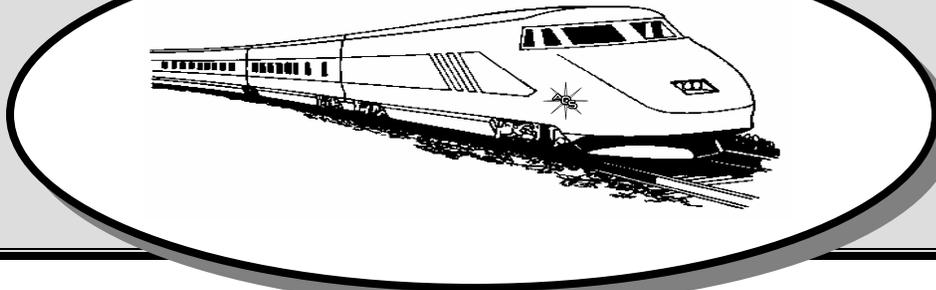
**PLEASE CHECK YOUR ADDRESS LABEL.** If your label shows the current month/year your dues are **DUE NOW**. If the date is older, your dues are overdue.

**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

Published  
monthly by  
The  
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## President's Message

*By Pete Goetz*

Hi Folks,

Well, it's almost here... the OPAL Show that is. The Societies annual show is only four weeks away. So if you are traveling, come on by and say hello to the 'locals'. If you live close by, say couple-three hundred miles, come, make a weekend of it. I'm sure you will enjoy your self's. We can hang-out and talk OPAL. If you can help out at the show please let the board know either through the website or by phone.

We have had a good response to our request for the electronic edition of the OPAL EXPRESS. The value is that The AOS can hold down some expenses and maintain, or even increase, the level of public awareness and appreciation for the beauty of OPAL in particular, and the Society in general.

The end of the year is not far away. This year that means we will be electing several officers to run the society for the next years.

Pete Goetz

## Opal Workshop

The AOS opal workshop is at Ball Jr. High School on 1500 W. Ball Rd., Anaheim, CA. It can be open for members on Monday. Contact Stan McCall at (714) 220-9282.

## Members Only Website Password

To log on to the website's members only area at: [http://opalsociety.org/aos\\_members\\_only\\_area.htm](http://opalsociety.org/aos_members_only_area.htm) type: Name: "member" and Password: "koroit".

## To have your Newsletter e-mailed to you...

About a third of the members responded positively to an e-mail asking if they wanted to receive the newsletter electronically. Thank you! You are helping your Society!

Since we don't have everyone's current e-mail address, we need to hear from you. A mass letter mailing will occur shortly, but if you want it e-mailed sooner, please e-mail the editor, Jim Pisani, at [webmaster@opalsociety.org](mailto:webmaster@opalsociety.org). Please indicate your name and e-mail address that you want it mailed to.

Thanks,

Jim Pisani, Editor, American Opal Society

## START MAKING PLANS...

### IT'S COMING!!!

## The American Opal Society's 37th Annual ANNUAL OPAL & GEM SHOW

*Largest Opal show in USA!*

**Sat. & Sun., November 6 & 7, 2004**

Saturday 10AM - 6PM

Sunday 10AM - 5PM

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## Conrad Cone Passes Away at 94

**Conrad Cone**, a life-time AOS member and local artist, passed away last month. Cone, a resident of Buena Park, had just celebrated his 94<sup>th</sup> birthday. Conrad Cone was born in Chester, Connecticut in 1910. He has lived in Southern California since 1946. He retired from the US Navy in 1953 after serving during World War II and the Korean War. He attained the rank of Lieutenant. He spent another 19 years with the Long Beach Unified School District.

Conrad learned his craft by taking a series of jewelry, lapidary and silversmithing classes at the House of Opals and refined his techniques over the last 50 years. He did most of his work at his home workshop and has created many beautiful jewelry pieces. Some of his artistic creations were displayed at his showcase at the Opal and Gem Show. Conrad had been very generous in donating several jewelry sets to be used for fund raising for the American Opal Society, which is a non-profit organization dedicated to educating the public about the beautiful and multi-colored gemstone opal.

Conrad will be missed by his artistic techniques to his son, Skip, who collaborates with him on some of his creations. Skip has followed his father and pursued a Navy career prior to forming his own business in San Diego. Together they design intricate pieces of jewelry such as earrings, necklaces, pendants and rings. They fabricate the designs in silver and gold, and then cut the opals or other stones to exactly fit the inlay channels of the design structure.

Conrad will be sincerely missed by the American Opal Society. We would like to thank his Son Skip for the help he had done on the prizes his Dad had made for the American Opal Society.

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## Eselil Philipps Passes Away

Eselil Masters Philipps passed away early in September of 2004. She was caretaker of the Royal Rainbow Opal Mine in Northern Nevada and a longtime AOS member. The mine, owned by Max and Susie Berchtold has been worked since the 1960's. Else retired from the US Postal Service and chose to follow her passion for opal at the Royal Rainbow mine where she has been caretaker for several years. Else was a committed opalhollic cutting and polishing stones from the mine and was a regular dealer at the annual Quartzite gem and mineral shows - most recently selling at the Desert Garden Gem & Mineral.

Eselil was born June 8th, 1938, she passed away on what we all believe to be the 29th of Sept. She was the caretaker of the mine for 12 to 17 years.

Else is survived by a son and daughter, Tamsen Sue and Christopher. She also leaves 6 grandchildren of Tamsen Sue: Libby, Sherman, Thor, Hanna, Elsa, and Eythan.

The opal community has lost a wonderful person and fine member who also worked diligently with efforts to keep our public lands open to rockhounding.

God Speed Eselil,  
Russ Madsen

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## Rainbow Matrix

As the leading Opal Society in the US which is the biggest market for Australian opal in the world, I Australian Opal Mines thought that they would like to give a description of new opal term, "Rainbow Matrix", that originated from the Andamooka opal fields.

The Andamooka opal fields probably the most stable opal in the world. It comes in many different forms. Solid opal, of course, painted ladies, matrix opal and "concrete". Marketers of Andamooka opal spend a lot of their time explaining to their

customers what Concrete is. It is advertised and spoken of. Potential buyers think of their driveways into their homes as concrete. Nothing could be further than the truth. After a meeting of the same marketers of Andamooka opal it was decided unanimously to rename Concrete "Rainbow Matrix".

Rainbow Matrix is very similar to Matrix and miners are often heard disputing whether a stone they have found is indeed Matrix of Rainbow Matrix. Both when treated look very similar to Black Opal. In fact in the past Matrix opal has been known as a "poor man's black opal". Rainbow Matrix does not hold a polish that regular Matrix does because it is so porous. However when it is sealed with a number of different sealants it looks absolutely beautiful.

To view some Rainbow Matrix, visit [www.austopalmines.net.au](http://www.austopalmines.net.au). It is becoming very, very popular because it is so modest in price.

Kind regards,  
Murray Willis, [opalmine@tne.net.au](mailto:opalmine@tne.net.au)  
<http://www.austopalmines.net.au/>  
Box 345, Magill, SA 5072, Australia

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## Need Help with Opal Repair

*Here is a thread of messages that I found in the Orchid Digest from <http://www.ganoksin.com> concerning the care and crazing of opals. They were published from 9-03-97 to 10-17-98. The Ganoksin Project provides an information forum on the Internet free of charge for all things connected with jewelry and jewelry making. Visit it and see! Printed with permission of Ganoksin. The Editor*

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From: Wendy Newman

I was wondering if anyone out there could help me out of a jam. I made these earrings with black opal doublets and set them in 22k bezels. Everything went fine, I sold them last week. Today, the customer brought them back and said after she wore them for the first time she noticed one of the stones was cracked. I don't know how it happened, but I've got to make it right somehow.

I've heard of a way you can repair opals. Has anyone ever done this? The cracks appear as white lines, but the surface isn't marred at all. Can this be done without removing the stone? Is a product called "Opticon" good for this? How does it work? Does anyone have a service that I can send the earring to be repaired? I'd appreciate the feedback, the customer is really coming unglued!

Thank You!

Wendy Newman  
[ggraphix@msn.com](mailto:ggraphix@msn.com)

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Subject: Re: [Orchid] Need help with opal repair

From: Gary Dawson

Sounds like your opal coming unglued is what's causing your client to "unglue" <grin>.

One old lapidarist trick is to correctly mix a water-clear epoxy, (like epoxy 30-30) then mix that 50/50 with acetone. The acetone thins down the epoxy considerably and gives it a viscosity that will allow it to capillary into most any crack when painted on the surface. In rather short order the acetone will evaporate, leaving the mixed epoxy in the crack and sealing it.

To further the process, I've mixed a substantial quantity of the epoxy/acetone mixture and then vacuumed it to really suck the stuff deep into a stone.. If you do that you will have a mess to clean up on the surface but that can be accomplished with q-tip and acetone when everything had dried sufficiently... perhaps a day and a half or so.

Good luck.

G

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From: Wendy Newman

> One old lapidarist trick is to correctly mix a water-clear > epoxy, (like epoxy 30-30) then mix that 50/50 with acetone. > The acetone thins down the epoxy considerably and gives it a > viscosity that will allow it to capillary into most any crack > when painted on the surface.

Gary, Thanks for your reply. I ended up using that "Opticon" and it worked really well for the hairline fractures, but I had these other opal doublets that had chipped and was looking for something that would fill the chips and take a good polish. I just got some epoxy 300. Would that work? Thanks  
Wendy Newman

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From: Mark Liccini

> a product called "Opticon" good for this? How does it work? > Does anyone have a service that I can send the earring to be > repaired? I'd appreciate the feedback, the customer is really > coming unglued! Thank You! Wendy Newman  
ggraphix@msn.com

No one should or can guarantee Opals. You should advise your clients up front that they are fragile. But for your problem you can try Opticon and even water glass or Canadian Balsam to fill the cracks. But it is unlikely they will entirely disappear, and all these filler processes involve some light heating so the stone will incur further risk of cracking. The type of crack you describe is called "crazing" and it might be just a fraction of a millimeter on the surface. So you should have a lapidary repolish it. In that case you might get under the crazing. But with a doublet you probably don't have enough thickness in the Opal to sand and polish. There is a way to prevent it from falling completely apart, that is put a layer of clear Quartz on top, a triplet!!

Mark Liccini

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From: Al Gilbertson

Opal crazing (small cracks) can be one or two small crazings or heavy webbing or cracks. Opals have a certain amount of water molecules in their structure. If dehydration of these water molecules occurs, an opal is susceptible to crazing at any point after that. The stone can have already been dehydrated when purchased and you will have no knowledge of it. Dehydration can occur from setting an opal out where it will get sun and be warmed (and in some jeweler's lighted showcases or their windows). Amount of dehydration and potential seriousness of crazing is dependent upon how much water is present in the stone and how much vacates the stone. A stone with smaller amounts of water will be more "stable" but could still craze. Crazing usually occurs in the opal (after dehydration) when there is a sudden temperature change to the stone (thermal shock). This can be having the stone in a cold place and putting in a warm hand, having the stone warm (being inside) and going outside where it is very cold. Knew a lady a few years ago that would put her jewelry in ice cube trays when she went on vacation (and freeze her jewelry). She destroyed a new opal piece by doing this.

Al Gilbertson

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From: Deewo

Another crazed opal story: A neighbor of ours bought his wife a gorgeous tenth anniversary present: a ring containing a HUGE opal surrounded by diamonds. Very impressive piece of jewelry. The first weekend after she got it, she wore it to a party, and over

coffee, the group got into a heated political discussion. To emphasize a point, our heroine banged the palm of her hand on the table, and the opal disintegrated! (marriage pretty nearly did, too. She thought he had given her a fake.)

D.

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From: Nathalie Thomson

We offer our experience as Opal cutters, designers, setters, buyers and wearers:

Opals craze for a number of reasons, one bad opal, two extreme heat or constant heat such as lighted showcases, safe deposit box dryness and pressure changes over years, the simple solution is Opal should be worn, it should not be stored in safe deposit box over long periods, it should not be put in lighted showcases or exposed to extreme heat, Opal is very misunderstood... a lot of misinformation... for example... Opal stored in oil and opal stored in Glycerin... both are "bad Ideas" especially rough material... since opal has porosity it will soak up oil and glycerin and discolor over time... many years or more... and crazing can be induced... I have seen ounces of fine opal left in jars and "ruined" over a period of years... now as far as polished opal, if the polish is very fine, oil or water will not make a difference in longevity... but if polish is bad it (oil) can again be soaked into stone and discolor it...

A good Opal is a Good Opal, oil and water will not help it, water cannot hurt it... oil can discolor it good or bad opal... we have millions of carats opal stones in our inventory some as old as 20 years or more since cutting, none are stored in water and none in oil... every few years we junk out a few stones... we have showcases full of opal jewelry...no crack or craze problems, we have many clients world-wide who have our opals and opal jewelry and NO RETURNS... unless a client breaks one due to their negligence... The Bottom-Line on Opal is The Opal must be Good Quality Opal to begin with, it must have a good polish, it must be set correctly in jewelry and it must be taken care of...

The Opal must be worn often... Opal Care Instructions:

1. Wear the Opal often...
2. Do Not Wash dishes with Opal on... Detergents are bad...
3. Do not do the garden or manual labor with Opal on... it is not a diamond !
4. Remember Opal and Tanzanite are the same hardness or softness...
5. Do not store Opal in Safe Deposit for long periods of time... years...
6. Store Opal in Safe Place in Jewelry Box... not under everything else...
7. Wear the Opal often...

Opals International Jewelers, Inc

<http://www.aussie-opal.com>

800-376-6725

[jthomson@icon.net](mailto:jthomson@icon.net)

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## Finding and Finishing Ammonites

*By Dave Daigle, Edmonton, Alberta, Canada  
rokhound@planet.eon.net*

### Collecting Ammonites:

Somewhere in the Lower Middle Devonian, some group of Nautiloids gave rise to a modest group of coiled Cephalopods, the Ammonites. They really picked up their pace in the Mesozoic Period and became more plentiful and varied, and were dispersed almost worldwide. They differed somewhat from their modern day cousins, mainly by internal structure.

As they died on the ocean floor, they were buried in the sea mud. In North America that mud became, for the purpose of this paper, either shale or Ironstone. Normally the mud would be pressed into flat layers of shale by the pressure of the sea and

mud above it, but the hard bodies kept their shape and became concretions. Those concretions, or roundish UFO shaped nodules of shale and Ironstone, are found in the Aragonite Zones of the Badlands, in Southern Saskatchewan, Southern and Mid Alberta, and Northern Montana and are the geologic structures where Ammonites are found today. You usually find concretions

in the upper sides of banks on existing rivers, such as the Bow River, or in the Badlands banks, which were rivers at one time. Surface collecting is easiest, although some rockhounds have adapted a type of long tined pitchfork for prodding down into the soft Bentonite beds in hope of striking a concretion.

Once found, the trick is to break open the concretion. If cleaned off carefully, one can usually see small fracture lines or, sometimes, a piece of the Ammonite peeking through a spot at the edge of the nodule. A sharp chisel, a hammer, and a steady hand, and most concretions will break in half where the Ammonite is laying usually exposing a concave side of the concretion with shell attached and the Ammonite itself imbedded in the other half. If you are after the Gem...or shell ... then you can break the Ammonite out of the now halved concretion. But, if you want a complete Ammonite, if indeed it is complete, than traditional methods of removing a fossil from matrix are used. (Thank goodness for Foredoms and Dremels.)

Trivia time....The Ammonites got their name from the chief God of the Triad of Thebes Amun, who was often depicted as a Ram with curved horns.

The area covered by the Bears paw Sea, which included Northern Montana, Alberta and Western Saskatchewan is where we find most of the Placenticerus Meeki species. The Meeki is, in my humble opinion, the best gem quality shell. These concretions with, hopefully, Meeki inside them, can be anywhere from 6" to 3" in diameter! The bigger ones, and most others, are "halved" right on the spot to see what treasures they hold and to more easily get them back to your transport. Most will fit into a backpack but some we have to "sling" and carry these on our backs also. Heavy?... You Bet!

But alas, sometimes you find the other kind, what we call barren shale, and your efforts of digging them out and breaking them in half are not rewarded.

Hmmm, heavy... Reminds me of a time when I was loaded down with a heavy pack full of Ammonite, walking on a game trail at the bottom of a coulee on the way back to my truck. I came around a corner, with my head down... of course, (typical Rock hounding syndrome) and came face to face with a huge Whitetail Buck! Now, it's nice to see nature from a distance, but up close those bucks are huge!!! He startled me and I fell backwards on my pack and watched as the buck took off straight up the side of the coulee like the hounds of hell were chasing it. I recall, as I laid there looking up, that the bank was about 100 feet high and pretty well straight up! Well, after kicking my legs for a while, and laughing at my predicament of looking, for all the world, just like a turtle flipped on it's back with it's legs wiggling, and rocking my body I finally rolled on my side and managed to get back on my feet. To this day, I still don't know which one of us were scared more, the buck or me.

Do you still want to go hunting for these concretions with that beautiful Ammonite shell inside? A word of warning, you must, at least in Canada, have the appropriate Ammonite permit to collect Ammonites! The fine can be severe for collecting without one. But it doesn't stop with a license, once you have returned home with your treasures, you must then fill out a disposition form and take pictures of your finds, which are sent off to the Tyrell Museum, where the experts look things over. If you have not discovered a new species or anything of paleontological value, they send you a reply...and then the Ammonites are yours.

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### From Raw To Gem Ammonite

I will attempt, in my humble way, to describe to you the way in which I work Ammonite. Please bear with me, as writing is not my forte'.

Once I have gotten my Ammonites home, it's time to clean them to see what I've got. This can involve anything from muriatic acid baths...remember AAA, always add acid...never water to acid, to a simple cleaning with a brush and water. Some Ammonite has a thin film of white, or unformed calcite on top of the gem, this is when acid is used in dilute amounts to clean it off. If it's too filmy it usually extends down through the shell and makes it rather useless for gem quality pieces. Although with acid, the colors are still there.

Next comes the decision to keep it whole. If indeed you found a whole one in one piece, you should keep it as such .... Or to "gem it", if it's in many fractured pieces. If it's whole, it's sanded by hand later. I've found no better way to do it, although I've experimented plenty.

Ammonites, it seems, always start their lives with dark colored, blue and green shells. Probably to aid them in hiding from their many predators. Their shell is in layers, starting from red, to the oranges and yellows and then to the greens and blues of the last layers. So, if you feel brave, you can continue to sand down through the layers to get at the rare greens and blues. But, like an opal, be careful, after the last blue color...there's nothing but shale and you will have lost your color!

But alas, I wander off...Back to it then. There is much to do before laying on the sandpaper. Firstly, if not whole, you must cut away the excess shale, this can be a tricky process also. You should try and keep about 1/2 of shale still attached to the Ammonite Gem. Remember, the Ammonite is a Nautiloid and shaped accordingly, albeit flattened out somewhat from the pressures of time. Therefore there will be gem on "both sides" of the Ammonite, and you have to decide where to cut it. Flat spots are preferred, but they are rare in a Nautiloid shaped body.

Depending upon the color of the shale you probably have to seal the Ammonite. If whole, then you seal the whole Ammonite. But for this paper, let's assume that you have Ammonite pieces. The reason for sealing the Ammonite is to darken the shale down and to seal the gem shell to the shale beneath it. Again, referring to opal, the darker the matrix, such as Black Mintab Opal, the brighter the color or fire is seen. Same thing with Ammonite gem. The darker the shale below, the brighter the colors of the gem will seem to be.

Sometimes, Ammonites come with the shell sitting loosely on the shale cores. This is where the Opticon Sealer comes in. You

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need to heat the Ammonite pieces up to about 150 degrees and then apply the sealer to the gem with a brush. I use sheets of 1/2

inch steel and lay them across the burner elements of a kitchen range. But if you're doing a single piece, or just a few, a slow oven will do just nicely. The warm stone will actually draw the sealer down through the gem and into the shale beneath it, thus effectively sealing the gem to the shale and making the shale darker. Take the pieces off the heat and let them sit for a few days. The sealer never quite seems to harden, but almost.

Now, the pieces have to be cut into fairly flat pieces or free forms. Not too small yet as you have to use the lap wheels next. I guess this part just takes practice, but you can actually find some fairly flat pieces on the Ammonite ... you just have to picture flat enough places and sizes to eventually make gems from. Sometimes your pieces are small. But they are flat.

The Gem Quality of the pieces are important and could alter your decision for gem or freeform pieces. "A" grade or better have a finely fractured texture with either a multitude of colors or a single brilliant color. The grades differ to c, b, a, aa and triple a grades. Now that we have formed the AFAC we hope that the grades can be regulated. But for now beware, some peoples ideas of A grade are not always the same as someone else's. Some gem has wide fracture lines and poorer colors and are therefore of lesser quality. After you have done it for a while, you can tell this when you first crack open the concretion.

Next comes the flat laps. I usually start with about a 400 grit ... carefully ... the gem is not that hard. Think of it as a regular shell and you'll be fine. All you want to do in this stage is to "flatten" the piece you are working on. Some of it, of course, can never be flattened and I believe these pieces would be great for intarsia work, but since I haven't got that figured out yet, for freeform pieces. Once you have your piece fairly flat, look at the center of the piece, you'll probably and ... if you stopped soon enough .. that it's the green or blue color. If you didn't stop soon enough, then you'll find shale,...Damn! And you start over with a flatter piece. Seriously though, keep an eye on it and you'll be fine. This is the stage where you must decide, freeform or gem quality. If you are doing gems instead of freeform, you cut out your gems before you start your 600 stage. The most popular way to cut gems ... which also gives you the least waste ... is the rock band saw. But, the traditional saw if fine, just lay your gems out carefully as to waste as little of it as possible... It's expensive stuff! An oval of 10x14 can be \$80.00 or more if it's "AA" or better!

I dop my gems with a two part 5 minute epoxy on to welding rod pieces. Just warm up the metal rods with a torch slightly and stick it to the already placed epoxy on the back of the gem (the

shale). I round them into calibrated shapes with a 400 or 600 grit expandable wheel with sc grit.

Finally, the gem must be capped. Some lappers use glass, some use a product such as Envirotex, a two part sealer/glue that hardens rock solid. These methods are ok, but for rings and high abuse jewelry you still can't beat Spinel or Quartz caps. I use tempered glass or I make my own caps from quartz, for brooches and most of my free forms.

I hope I have been able to shed some light on the long kept secrets of Ammonite Gems. But if we are going to sell rough, people need to know how to work it properly. It is too precious and beautiful a gem for people to have to learn the hard way, as I did.

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*From The British Columbia Rockhounder, Vol. 3 # 1, and Gem & Mineral Federation of Canada, Vol. 20, # 1, , Via the Strata, 1-03*

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**HINTS AND THINGS**

When lapping or polishing geodes, keep the crystals sparkling clean by packing them with damp ivory flacks. The grit or polishing agent washes right out. The remaining soap will soak right out in warm water. (via *The Rock Rattler 12/95*)



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To remove a cab that is stuck in its finding, heat the finding in boiling water. Then gently tap it with a pencil. This works because metal expands faster than stone, when exposed to heat. (via *The Roamin Rams* 1/96)

Use a special buff when using oxalic acid with your polishing compound. It is a poison and could still be in your compound for a long time.

If you have been having trouble keeping your saw blade cutting properly, check the speed of the blade. Make sure it is running to the manufacturer's recommendation. If it is running too slowly, you will have trouble cutting very hard material. The newer blades are made to run faster than 1175 RPM. If you have a newer blade, check it out. (by *Dick Rathjen* in *Stoney Statements*, via *The Coral Geode* 3/97)

If you get too much solder on a spot when making jewelry, trying to file it off takes too much time. To get rid of the excess without filing, take a narrow strip of silver 1/8 x \_ inch. Cut a slit in one end. Heat the piece with the excess solder, touch the strip with the slit to the excess. The extra solder will flow up the cut. (via *The Burro Express* 3/97)

To maintain our standard of living, every day, 4,000,000 eraser tipped pencils are purchased. That is enough erasers to correct all the mistakes from 1,500 miles of notebook paper - about 129 acres of goofs. Minerals involved - graphite, kaolin and pumice. (via *minerals information packet from SME program*)

Always take precautions against dust inhalation. Talc can be carved with a pocket knife and shaped with sandpaper or sandstone rock. This can be done outdoors and is close to the way the Indians shaped their soapstone artifacts.

Via *Deming Rock Chip* 4/97

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## Jasper... Born Of Fire and Ice

by Donald Barr

Jasper is in the silica group of minerals. The silica group is divided into crystalline quartz, which includes all varieties occurring in large crystals, and cryptocrystalline, which includes all varieties in which submicroscopic crystals form granular-to-fibrous aggregates, and amorphous which does not form crystals. The jaspers fall into the cryptocrystalline group along with chalcedony, chert, agate, and flint.

The name jasper applies to various forms of opaque to sub-translucent chalcedony of richly colored rock consisting of interlocking crystals of cryptocrystalline quartz too small to see with the naked eye. Mineralogists can discern jasper's structure by the way it diffracts x-rays. The cryptocrystalline structure indicates how the stone came into being. Jasper has various names applied to its sub-varieties.

Jasper is born of fire and ice, the impact of hot lava and cold rock. Most commonly, the cold source rock is porphyry, a dark igneous rock that contains relatively large and conspicuous crystals in a fine-grained groundmass that is unstable; they melt while the other components of the rock remain solid. This produces a silica-laden fluid that flows into cracks in the porphyry where it quickly cools and crystallizes. It is the rapid cooling that prevents the growth of large crystals and thus promotes the formation of a jasper. Jasper may also form in sedimentary parent rock, again, with lava as the heating agent.

Jasper is frequently found near deposits of iron ore, and often it contains iron compounds and impurities. These impurities usually give a red and brown color to the jasper, but there are also yellow and green jaspers. Red, brown, and yellow colors come from the different forms of iron oxide.

The mossy green tones come from chlorites (minerals containing magnesium, aluminum and silicon) as well as iron oxides. It is rare to find a single color jasper. More often, the stone displays deep hues in indistinct ribbons. Jasper's

suggestive markings contributed to its ancient popularity, but also to its modern downfall. Many people nowadays find the pattern in the rock too garish for their taste.

Jasper has been popular in the Middle East and Europe for over 5,000 years. In ancient Egypt and Rome, craftsmen worked the jasper into magic symbols, secret signs, and large polished tablets. The Russian Czar's winter palace in St. Petersburg had a beautiful collection of carved jasper. The maharajahs of India had many beautiful ornaments made from jaspers. Present-day rockhounds still work with the beautiful rock.

It is the cryptocrystalline structure of jasper with its tiny crystals, its density, and its hardness that enables craftsmen to work the jasper and get a high polish.

From *Oregon Rockhound* 3/95, Via *Golden Spike News* 2/02

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## Opal Fossils

What are opal fossils? Where are black opal fossils found? What does opalized mean?

### Lightning Ridge - Black Opal Fossils

Only one place on Earth produces black opal fossils - Lightning Ridge in northern New South Wales, Australia. Lightning Ridge is the only opal field in Australia with fossils of diverse land-living organisms - pinecones and platypuses, microscopic protozoans and gigantic dinosaurs. The fossils are usually exact replicas of plant, shell or bone material, and at times they are comprised of gem quality black opal, which is as valuable as diamonds and more beautiful.

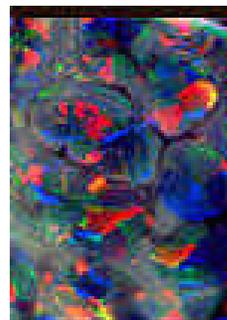
Black opal fossils which may be found at Lightning Ridge include

remnants of ancient plants, mussels, snails, crustaceans, fish, turtles, plesiosaurs, crocodiles, pterosaurs, dinosaurs, birds, and mammals. 110 million years ago the supercontinent Gondwana was a wilderness of forests of pines, ferns and palms separated by tracts of shallow sea. Dinosaurs and their relatives dominated this landscape, as well as our rare and tiny mammal ancestors. Near the edge of this ancient continent, fragments of the remains of these animals accumulated in the sands of the inland sea. Today deposits at Lightning Ridge in northern New South Wales yield some of the rarest, most beautiful and precious fossils in the world.

Lightning Ridge fossils are three-dimensional replicas of ancient organic objects, transposed into non-precious patch or precious opal. In those that are pseudomorphs, the silica has filled a simple

cavity or void, like jelly in a mould, so that only the basic shape and perhaps the surface texture is preserved.

However, many specimens are replacement fossils, in which intricate internal structures have been preserved by



chemical alteration before the cavity was filled by the silica solution.

Most specimens at the Ridge are a combination of pseudomorph and replacement fossils. Although the transformation to silica has destroyed biomolecular evidence, marrow tissue, blood vessels, capillaries and nerve channels may be perfectly preserved. If the potch is transparent, these features are clearly visible below the surface in opalised bones. A surprising aspect is the opalisation of delicate materials like leaves and even dinosaur skin. Many pieces resemble coprolites, reptilian armour scutes or heavy scales; very occasionally, bone specimens seem to show remnants of tendons or cartilage.

This outstanding quality of preservation is partly because the opal-dirt is extremely fine-grained and an ideal casting medium. Kaolinite, smectite, and illite produce the putty-like properties of the opal clay, the smectite making it plastic and malleable.

Most opal fossils found at the Ridge consist of potch (colourless opal), therefore any fossils with colour are rare and valuable. Many fossils are damaged by machinery during excavation, as pick and shovel based operations are giving way to machine-driven excavations. Removing fossil specimens can be a delicate operation, and colourless fossil specimens are largely ignored by miners searching for colour.

#### **South Australian Fossils**

The opal fossils of South Australia are both jewels of science and beautiful gems. The Eromanga Sea that covered the interior of Australia 100-120 million years ago was rich in marine life. Ichthyosaurs, plesiosaurs, fish, sharks, ammonites and belemnites swam in the open water. Slow-moving and sedentary animals, such as starfish, crinoids, cockles, mussels, snails and tube-worms lived on the seafloor.

Only those bones and shells that became trapped in seafloor sediment had a chance of becoming fossils. Some were replaced by clear silica, and others by precious opal.

One area which yields a vast resource of opal fossils is Moon Plain, approximately 35 km from Coober Pedy in South Australia's outback. Once part of a vast inland sea which covered most of Australia, Moon Plain once teemed with marine life, but is now a wonderland for palaeontologists. South Australia has the best cold water cretaceous marine



*Project manager for Lightning Ridge Opal and Fossil Centre Jenni Brammall with a model of muttaburrasaurus, a dinosaur known from opalised fossils.*

deposits in the world, and it is difficult to imagine the extreme freezing temperatures of millions of years ago compared with today's scorching heat.

#### **Sources :**

"Black Opal Fossils of Lightning Ridge", Elizabeth & Robert Smith, Kangaroo Press, 1999.

Origin Energy Fossil Gallery

<http://www.samuseum.sa.gov.au/fossils/>

Australian Museum Online - <http://www.amonline.net.au>

From <http://www.opalsdownunder.com.au>

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### **New Fossil Museum Set To Become "World Best"**

*Thursday, 26 August 2004*

Lightning Ridge's Opal and Fossil Centre project has gained momentum following a commitment from Walgett Shire Council for funding of \$500,000.

In its most ambitious venture yet, Lightning Ridge is set to create a world-class showcase of glittering opal and incredible opalised fossils from the age of dinosaurs, a fascinating 'learning laboratory' where visitors can experience the excitement and spectacle of world-famous black opal, wonder at evidence of life forms from the past and get a taste of the colourful history and lifestyle of the opal fields.

The Opal and Fossil Centre project (LROFC) had all but disappeared from public view until council voted in 2003 to commit \$500,000 over five years to the project.

Since April a project manager has been appointed, a project office established and a range of activities initiated.

A development brief for the facility is currently being drafted by Richard Wesley of Museum Planning Services Australia. MPSA's services have been obtained through the regional Museums Advisory Service program of Museums and Galleries NSW.

The local committee is working with the Department of Mineral Resources, Lightning Ridge Miners Association, Walgett Shire Council, local residents and the Department of Infrastructure, Planning and Natural Resources to finalise a site for the facility.

Tenders have been conducted for architecture and exhibition design and in a coup for Lightning Ridge, internationally-acclaimed architects Glenn Murcutt and Wendy Lewin have accepted their appointment and this month, the committee will select an exhibition design company from among the best in Australia.

"The Opal and Fossil Centre is vital to the future of Lightning Ridge," project manager Jenni Brammall said this week.

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"It will be a dynamic hub for tourism, education, and commerce. We're planning the world's best public display of gem opal, the world's best display of our precious opalised fossils, a centre for research and a wonderful resource for the community," Ms Brammall said.

"We're thinking big and investing the time and money it takes to build a truly world-class facility, in an innovative and sophisticated building that will attract international attention."

The development budget is estimated at between \$5 million and \$7 million.

The recently-opened Australian Fossil and Mineral Museum at Bathurst cost more than \$4 million despite being housed in an existing building. While the project is going to take time, the LROFC steering committee is not sitting idle.

A display about the project and the Ridge's opalised fossil will be opened to the public before the end of 2004 at the project office in Morilla Street. A fossil identification service and registry will also be established.

A public meeting will be called next month to provide an update on the project and an opportunity for more community members to give input and get involved.

To join mailing list for Lightning Ridge Opal Fossil Centre, to register suggestions or for more information, contact project manager Jenni Brammall on 6829 1667 or email [opalfossil@wj.com.au](mailto:opalfossil@wj.com.au).

From "The Ridge"

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## October Gem & Mineral Shows

**2-3 - SAN FRANCISCO, CA:** Show, "Great San Francisco Crystal Fair" Pacific Crystal Guild; Fort Mason Center, Laguna and Marina Blvd.; Sat. 10-6, Sun. 10-4; contact Jerry Tomlinson, (415) 383-7837; email: [sfxl@earthlink.net](mailto:sfxl@earthlink.net); Web site: [www.crystalfair.com](http://www.crystalfair.com).

**8-10 - COSTA MESA, CA:** Gem Faire; Orange County Fairgrounds, Bldg. 14, 88 Fair Dr.; Fri. 12-7, Sat. 10-7, Sun. 10-5; admission \$5 (weekend pass); contact Yooy Nelson, (503) 252-8300; e-mail: [info@gemfaire.com](mailto:info@gemfaire.com); Web site: [www.gemfaire.com](http://www.gemfaire.com).

**8-10 - SIERRA VISTA, AZ:** 30th annual show, "A Rock Rustler's Dream" Huachuca Mineral & Gem Club; Cochise College, 901 N. Colombo; Fri. 12-5; Sat. 9-6; Sun. 9-4; free admission; gems, rocks, minerals, jewelry, lapidary materials and equipment, books, tools, demonstrations, field trips, hourly prizes; contact Mike Anderson, P.O. Box 1596, Sierra Vista, AZ 85635, (520) 456-9202; e-mail: [mikea@theblueopal.com](mailto:mikea@theblueopal.com).

**9-10 - ANTIOCH, CA:** Annual show; Antioch Lapidary Rock & Gem Club; Contra Costa County Fairgrounds, Flower Bldg., L St. and 10th St.; Sat. 10-5, Sun. 10-5; adults \$2, children under 12, Boy Scouts and service personnel in uniform free; dealers, exhibits, silent auction, demonstrators; contact Ramona Bond, 700 Michele Dr., Martinez, CA 94553, (925) 229-3215; e-mail: [ibmomobond@yahoo.com](mailto:ibmomobond@yahoo.com).

**9-10 - GRASS VALLEY, CA:** 37th show, "Earth's Treasures; NV County Gem & Mineral Society; NV County Fairgrounds, 11228 McCourtney Rd.; Sat. 10-5, Sun. 10-5; contact Cliff Swenson, (530) 272-3752.

**9-10 - LAKESIDE, CA:** 30th annual show, "Gem & Mineral Roundup and Craft Fair" El Cajon Valley Gem & Mineral Society; Lakeside Rodeo Grounds, 12584 Mapleview; free admission; gems, minerals, crystals, jewelry, beads, tools, handcrafted items, demonstrations; contact Patrick

Smock, 10583 Oak Creek Dr., Lakeside, CA 92040, (619) 443-8327; e-mail: [cprpsm@yahoo.com](mailto:cprpsm@yahoo.com).

**9-10 - PAYSON, AZ:** 7th annual show; Tonto Apache Reservation Recreation Center, Hwy. 87, mile marker 251, by the Mazatzal Casino; Sat. 9-5, Sun. 9-4; adults \$3, children under 12 free, discount coupons available at Chamber of Commerce; hand-crafted jewelry, gems, minerals, lapidary supplies; contact Bruce Berman, (928) 468-9532; e-mail: [Rimstones85547@aol.com](mailto:Rimstones85547@aol.com).

**9-10 - TRONA, CA:** 63rd annual show, "Gem-O-Rama" Searles Lake Gem & Mineral Society; Trona Lapidary and Show Bldg.; Sat. 8-5, Sun. 8-4; mineral collecting, displays, dealers, demonstrations, tours, geode cutting and sales, shows, movies, prizes; contact Bonnie Fairchild, 84830 12th St., Trona, CA 93562, (760) 372-5356; Web site: [www1.iwvisp.com/tronagemclub/](http://www1.iwvisp.com/tronagemclub/).

**9-10 - TUKWILA, WA:** 28th annual show; Northwest Opal Association; Tukwila Community Center, 12424 42nd Ave. S.; Sat. 10-6, Sun. 10-4; adults \$3, children under 12 free with adult; opals, gems, jewelry, exhibits, demonstrations, door prizes, raffles; contact Gerry Alexander, (360) 876-4543; e-mail: [Katsta@comcast.net](mailto:Katsta@comcast.net).

**16 - CANOGA PARK, CA:** Show; Woodland Hills Rock Chippers; Canoga Park Community Center, 7248 Owensmouth Ave.; Sat. 10-5; free admission; dealers, demonstrations, kids' games, silent auction, boutique, prizes; contact David Dills, (818) 774-0900; Web site: [www.rockchippers.org](http://www.rockchippers.org).

**16-17 - ANDERSON, CA:** Show; Shasta Gem & Mineral Society; Shasta District Fairgrounds, 5 mi. south of Redding; Sat. 10-5, Sun. 10-5; free admission; dealers, demonstrators, displays, exhibits, raffle, door prizes, silent auction; contact Steve Puderbaugh, (530) 221-6542.

**16-17 - CAYUCOS, CA:** 3rd annual show; San Luis Obispo Gem & Mineral Club; Cayucos Vets Hall at the Pier; free admission; contact Bob Hurless, (805) 772-7160.

**16-17 - LONG BEACH, CA:** 57th annual show, "Minerals from China" Mineralogical Society of Southern CA; Long Beach Convention Center, 300 E. Ocean Blvd.; Sat. 10-6, Sun. 10-6; free admission; 70 dealers, fine minerals, gems, jewelry, fossils, books, supplies, exhibits by private collectors and museums, kids' activities; contact Justin Butt, P.O. Box 41027, Pasadena, CA 91114, (626) 683-1770; e-mail: [MSSCShow@hotmail.com](mailto:MSSCShow@hotmail.com); Web site: [www.mineralsocal.org](http://www.mineralsocal.org).

**16-17 - PLACERVILLE, CA:** 21st annual show; El Dorado County Mineral & Gem Society; El Dorado County Fairgrounds, 100 Placerville Dr.; Sat. 10-5, Sun. 10-5; adults \$2, children 12 and under free with adult; dealers and exhibits featuring gems, minerals, jewelry, beads, and fossils, working demonstrations in cabbing, jewelry making, bead making, flint knapping, and soapstone carving, junior activities, door prizes, raffle; contact Jackie Cerrato, (530) 677-2975; e-mail: [jacobcer@directcon.net](mailto:jacobcer@directcon.net).

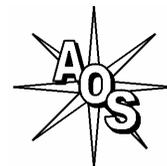
**16-17 - SANTA ROSA, CA:** 28th annual show; Santa Rosa Gem & Mineral Society; Veterans Memorial Bldg., 1351 Maple Ave.; 77 retail dealers, mineral and jewelry displays, demonstrations, silent auction, raffle; adults \$4, children 12 and under free; contact Shirley Mattson, P.O. Box 1852, Windsor, CA 95492, (707) 795-1730.

**16-17 - WHITTIER, CA:** 55th annual show, "Treasures of Rockhounding" Whittier Gem & Mineral Society; Whittier Community Center, 7630 WA Ave.; Sat. 10-5, Sun. 10-5; gems, minerals, jewelry; contact Jay Valle, (626) 934-9764; email: [jvalle@aqmd.gov](mailto:jvalle@aqmd.gov).

**22-24 - DEL MAR, CA:** Gem Faire; Del Mar Fairgrounds, 2260 Jimmy Durante Blvd.; Fri. 12-7, Sat. 10-7, Sun. 10-5; admission \$5 (weekend pass); contact Yooy Nelson, (503) 252-8300; e-mail: [info@gemfaire.com](mailto:info@gemfaire.com); Web site: [www.gemfaire.com](http://www.gemfaire.com).

**22-24 - EUREKA, CA:** Show; Kasey Enterprises; Redwood Acres Fairgrounds, 3750 Harris St.; Fri. 12-7, Sat. 10-7, Sun. 10-5; adults \$3, seniors and students \$1.50, children 12 and under free with adult; 20+ wholesale and retail dealers selling minerals, fossils, gems and jewelry; contact Kasey Enterprises, P.O. Box 2927, McKinleyville, CA 95519, (707) 839-1358; e-mail: [kaseyent@jps.net](mailto:kaseyent@jps.net).

**Nov. 6-7 - ANAHEIM, CA:** 37th annual show, "OPALS: Treasure of Your Heart" American Opal Society; Clarion Hotel, Anaheim Resort, 616 Convention Way; Sat. 10-6, Sun. 10-5; adults \$4, seniors \$3, children free; rough and cut jewelry, lapidary U.S. and Australian jewelry design and identification of Created Opal seminars, raffle; contact Jay Carey, (714) 525-7635; e-mail: [jaycarey@charter.net](mailto:jaycarey@charter.net); Web site: <http://opalsociety.org>.



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