

# The Opal Express

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



**Volume #36 Issue #12  
 December 2003**

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TO:

# Holiday Dinner Party December 11th

Important Dates:

Holiday Dinner Party  
 December 11<sup>th</sup>

— 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	
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**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.

If you checked any box above, please sign here: \_\_\_\_\_ Date \_\_\_\_\_

Without your signature here you will not be included in the member info list or included in the dealer roster.

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**Editor-Jim Pisani**

Please address all inquiries and exchange newsletters to:

**The Opal Express C/O  
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Garden Grove, CA 92842-4875**

**Email: [webmaster@opalsociety.org](mailto:webmaster@opalsociety.org)**  
Article Deadline is the 20<sup>th</sup> of the month prior to each issue

## Are Your Dues Due Now?

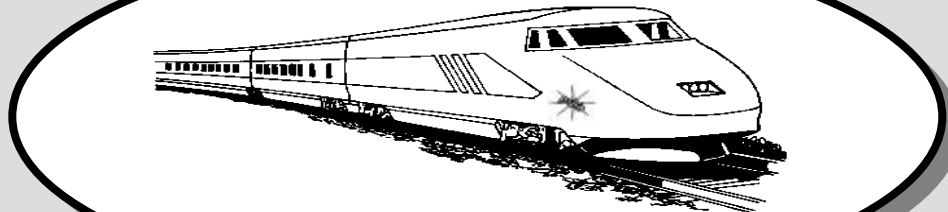
**PLEASE CHECK YOUR ADDRESS LABEL.** If your label shows the current month/year your dues are DUE NOW. If the date is older, your dues are overdue.

**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  
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The  
American  
Opal  
Society



December 2003

Volume 36 Issue 12

## President's Message

*By Pete Goetz*

Hi Folks! Well the 2003 OPAL SHOW has come and gone. If you missed it, you missed a really great time! (Hope to see you there next year?) All of our favorite vendors were there, selling their magnificent wares. There was a virtual cornucopia of sparkling bangles and bobbles to purchase or just simply stand and admire. There were several new vendors that added a slightly different favor to the overall presentation of goodies.

We had a great many door prizes this year, including an eight inch trim saw, a wide selection of ready made jewelry, and our special grand prize: a necklace with matching pin and ring designed and crafted by Conrad Cone.

I would like to thank all the members who came down and helped out at the show: show chairman Jay Carey and co-show chairman Mike Kowalsky, Lyle & Lucy Backus (from Chicago), Annette Bryant, Eva Coan, Bob Dixon, Lora Heidrich, Walt & Donna Johnson, Louis Kripple, Jane & Russ Madsen, Stan McCall, Bob Olinskas, Jim Pisani, Fran & Wes Roth, Hisako Schlatter, Pam Strong, Fran Todd, and Clare Gagnon and his demonstrators. It was really great seeing Carol Bova again.

Plans for next years show will start early this year (February), so, if you have ideas and would like share them with the Board of Directors, please feel free to join us at Ball Jr High School. Dates and times are to follow. Also, don't miss our Holiday dinner! See the details later in the newsletter.

\*\*\*\*\*

## December Snippets

*by Barb Whyre*

Picture show evenings were held in the Memorial Hall, Morilla Street, 1956 through the 1960s. Residents of the day will recall with pleasure these village gatherings. Films were shown by Dud Goss and later, his sister Terry. The Goss children all attended the Ridge school in the 1930's and 40's. Their father Ted was an

opal buyer, one of a few in the Depression, and a jack-of-all-trades. Terry Goss Shearer recently spent a few days in the Ridge. She was in the company of her nephew, Doug Paar, Seattle, son of sister Vera, who married an American after WWII. Doug and his American niece are exploring family history. There must be many Americans with such connections to the opal fields. Don't be afraid to checkout our website [www.wj.com.au](http://www.wj.com.au) and get in touch.

## HOLIDAY DINNER PARTY

**WHEN:** Thursday, Dec. 11, 2003, 7 PM-10 PM

**WHERE:** "The Restaurant Next to the White House" at **Hobby City**, behind the Opal and Gems Shop, 1228 S. Beach Blvd., Anaheim, CA. (On the east side of Beach Blvd. Just South of Ball Rd.)

**COST:** \$10/person total cost - includes tax & tip. 50% subsidized by the American Opal Society.

**WHAT:** Full course meal, includes entrée, desert (pie) and beverage. Choice of three entries:

- 1) Pot Roast with mashed or baked potatoes, vegetables, & garlic bread
- 2) Chicken Lasagna, with vegetables & garlic bread
- 3) Beef Burgundy over noodles, with vegetables & garlic bread

**PRESENTATION:** David Burton will give an after dinner talk on his Australian opal mining experiences.

**RESERVATIONS:** Contact Jay Carey at (714) 525-7635 for entree selection and reservations. Please leave a message if Jay is not home.

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[www.opalshop.com.au](http://www.opalshop.com.au)

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## Show Dealers

The show was a great success with a varied selection of great dealers. The AOS thanks you for being in our show!

Business Name	Contact Name	Specialty
Al's Opal Import	Al Ramirez	Opal rough, cab, faceted, specimens, jewelry, Ethiopian
Australian Opal	Leslie Neff & Larry Hoskinson	Australian Opal of all grades & types
Australian Opal Imports	Geoffrey Genzmer	Australian Opal - finished & Rough
Australian Opal Mines	Murray Willis	Australian opals
Casa del Lumbre	Sal Chavez	Opal & other jewelry, books, etc.
Coffee Creek Mining & Gem Co.	Joseph Edwards	Colored stones, Jewelry, etc.
Custom Creative Gem cutting	Stan McCall	Gemstone cutting, repolishing, repairs & custom design
David's Creative Jewelers	David & Bonnie Burton	Diamond & Opal Specialist
Andrew DeBoer	Andrew DeBoer	Misc. Jewelry, cabs, etc.
In A Flash	Tony Thurber	Australian Opal & Inlay Jewelry
J & J Gemstones	Hugh & Joyce Sessions	Gemstones, Andamooka matrix
Land of Wonder	Eric Scott	Australian Opals, All Fields, Calibrated & Freeform
Lasco Diamond Products	Donald Schultze	Diamond Products for Foredom tools, etc.
Marrujo's Creations	Paul Marrujo	Lab Created Black Opal & beaded necklaces
Nova Opal Supply	Vanessa Potter	Australian Boulder Opal
Parched Earth Opal	Barbara McCondra	Yowah Opal; cut, rough & jewelry
Walter Johnson	Walter Johnson	Jewels of Perfection – Master Jeweler
Opalcutter	Wes Roth	Opal rough, finished, jewelry
Opal Traders International	Walter & Joan Skinner	Opals of Australia & the World
Oro Valley Gems	Edward Newman	Fine facet rough, cut gemstones
Savings & Unlimited Gems & Minerals	Dale Yvonne Atkins	We deal in all lapidary items
The House of Tibara	Tim & Barbara Thomas	Opal rough, finished, jewelry
Tikka Opal	Mattie Tikka	Lightening Ridge Black Opal
True Blue Opals	Sally Patel	Wholesale Black Opals
Y. P. M. International	Miao Yang	Importer & Wholesaler of gems & minerals

## Demonstrators at Show a Big Hit!

A big thanks to the demonstrators at the Opal & Gem Show. We had a number of experts at the show, showing how to facet and carve gems, wire-wrap, solder, etc.

## Gem Carvers Guild of America at new Location

The Gem Carvers Guild of America now meets at the Whittier Senior Center, at the corner of Walnut & Washington Ave. in Whittier, California.

\*\*\*\*\*

## Members Only Website Password

The Members Only" protected area on our website, [http://opalsociety.org/aos\\_members\\_only\\_area.htm](http://opalsociety.org/aos_members_only_area.htm), has had the password changed. An account name and password are required to get into the protected area.

To login into the protected area, click the following when prompted: **Name:** member - **Password:** yowahnut

\*\*\*\*\*

## Opal Workshop

The AOS opal workshop is at **Ball Jr. High School** on 1500 W. Ball Road, Anaheim, CA. It will be available for AOS members on Wednesday. Contact **Stan McCall** for details at **(714) 220-9282** if you plan to attend a session.

\*\*\*\*\*

## AOS Raffle at Show

The raffle at the Opal & Gem Show was a big hit. Over 60 prizes were raffled off. Many of the prizes were donated by the dealers at the show and by members of the society. Also, the Society purchased a number of the prizes. Believe it or not, both grand prizes – the first being an opal necklace jewelry set designed and built by Conrad Cone and – the second being a 6 inch diamond saw – were won by the same individual! Bob Schneider of Orange, California, is the big winner! See the attached photo.



Lucky Bob Schneider show with the 7-inch tile wet saw that he won who won at the Opal & Gem Show. Bob also won the opal necklace jewelry set created by Conrad Cone.

\*\*\*\*\*

## Final Polish on Opals

Here is a thread of messages that I found in the Orchid Digest from <http://www.ganoksin.com> concerning getting a good polish on opal. They were published in May, 2002. The Ganoksin

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*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*

From: Jed Allsop

I recently started to work opal. My main focus has been Mexican fire opals. I cab the stones with a Diamond Pacific Genie. I'm doing pretty good, but just don't seem to be able to get a good final polish on my cabs. I have tried cerium oxide on a rough leather polishing pad, but the results were disappointing, especially if the opal has any small fractures. Then I just seem to pack the polishing compound into the opal.

Any advice this group could offer would be greatly appreciated. Thanks, Jed

From: Jim

Jed - Sounds as though you are getting the stone too hot at some point in the process; other than some boulder opals you should have NO small cracks to deal with at all. My best suggestion is still to follow Paul Downing's cutting/polishing instructions.

Jim Small - Small Wonders

From: coralnut

Jed,

I get a mirror finish on opals using a soft leather pad laid over cork. The lap is slightly convex which helps when working higher domed stones with somewhat flatter sides. The surface of the pad should be kept slightly damp and do not overload with polish powder. As Opal is silica base, cerium oxide should do well but I find Linda A does better since it is a finer micron powder. Run the wheel at low speed...say 200 to 400 RPM and use only medium pressure.

Regarding the fractures... there is little you can do in such a case except work the stone down to 50K diamond on a Crystal pad and when you go to the polishing wheel, only give it a short/light lick and a promise to finish the process. I don't recommend working on a stone with fractures... natural pits or matrix ok, but not fractures.

Remember, ALL diamond powders, no matter what grit or mesh, work by abrading while polishing oxides work on an electrical level. The former leaves the surface slightly greasy or 'smeared' looking while the latter provides a clearer and brighter surface.

Cheers from Don at The Charles Belle Studio in SOFL where simple elegance IS fine jewelry!

[dcdietz@attbi.com](mailto:dcdietz@attbi.com)

From: Dean & Candy Welter

Hi Jed, try using a wet slurry of Cerium Oxide on a felt buffing wheel. The wet slurry helps keep the opal cool and prevent cracking or crazing. Opal is SUPER heat sensitive. I have not worked any Mexican opal but this method works very well for me on my Australian Opal. I try to keep my felt very wet and don't use much pressure when I am polishing.

Hope this helps, Dean

From: Dave Sebaste

> I have tried cerium oxide on a rough leather polishing pad, but the > results were disappointing, especially if the opal has any small > fractures. Then I just seem to pack the polishing compound into > the opal.

Hi Jed,

I also use a DP Genie... a dream machine. Fractures will always pack with polishing compound. Nature of the beast. Use fracture-free rough (preferably), or use a toothbrush and water to clean after polishing. You could experiment, but I don't think you'll find a better compound for opal than cerium.

Are you sure that you've thoroughly sanded the stones at the higher grits, to remove the super fine scratches? With opal, you'll want to spend little or no time on the coarse wheels, and more time on the finer ones. You won't achieve a fine polish unless all the fine scratches are removed. The stone should appear reasonably well polished after the final wheel, before the formal polishing with the cerium.

Mexican opal isn't considered to be among the better opals, except maybe for contra luz opal or fire opal, which is usually faceted and doesn't have the famous "play of color". In all my years of playing this game, I've only seen one Mexican opal I would consider fine gem quality, and it was set in an heirloom piece.

Not to be offensive, but one of the first rules of lapidary (and computing) is GIGO: Garbage In, Garbage Out. It is not possible to create a superior gemstone from inferior rough.

Hope this helps,

Dave Sebaste - Sebaste Studio and Carolina Artisans' Gallery  
Charlotte, NC

[dave@sebaste.com](mailto:dave@sebaste.com) - <http://www.CarolinaArtisans.com>

From: Roger Dery

Jed, You may consider joining a lapidary digest. If you send a request to this address: [lapidary-request@caprock-spur.com](mailto:lapidary-request@caprock-spur.com) you can take part in dialog regarding the polishing aspects of Opal and many other stones.

Roger Dery - [gemdigital@hotmail.com](mailto:gemdigital@hotmail.com)

From: LONGLEY

> Remember, ALL diamond powders, no matter what grit or mesh, work > by abrading while polishing oxides work on an electrical level. > The former leaves the surface slightly greasy or 'smeared' looking > while the latter provides a clearer and brighter surface.

Hi Don.

"Polishing oxides work on an electrical level" haven't heard of that before. Could you please explain further how that works?

Ta Ian Longley. Sunny Nelson, NZ.

From: Dave Sebaste

Hi Don.

> "polishing oxides work on an electrical level" haven't heard > of that before. Could you please explain further how that works?

I'd be interested in hearing interpretations of this, as well. My level of understanding might be a little dated, as far as the science goes. As far as my information goes, its a subject for debate amongst serious scientists as to what actually happens

when a stone is polished. As opposed to just a successive series of finer grits, resulting in finer scratches, a polish on a stone is different than metal. I referred to this on a recent post as a "formal" polish, as opposed to a really fine diamond grit finish.

As Don stated, the polishing compound is usually an oxide... chrome, cerium, aluminum, etc. Magic stuff. What my limited mind allows me to accept as true is that there is an actual molecular flow that occurs, known as (I believe) the Bielby Process, allowing the surface to "glaze over", eliminating the finest scratches and providing a true polish.

The skeptic asks, how can the molecules flow without an extreme amount of heat and/or pressure? I dunno! That amount of heat would certainly melt my dop wax. Granted, it seems that a degree of friction comes into play... a semi-dry buff, with just enough moisture to prevent heating up seems ideal for many stones.

I'd love to hear an elaboration on this from any G.G.s or lapidaries out there!

Dave

---

From: coralnut

Dave,

It has been many years since I read a paper and several articles about the polishing theory but will try to give you the essence of what I remember.

First, the old Beilby theory has been out of vogue for about 10 years now. In that theory, the heat caused by friction caused a very thin layer of the stone to melt and 'flow' causing a glassy like surface several microns deep. That's where you got the molecular idea Dave.

That was preceded by concept, like in the glass industry, that the oxides 'planed' (not abraded) the high areas of the surface down until they were all the same level thus creating a smooth glassy surface (sound familiar?) that reflects light evenly...thus it is 'polished'.

About 6 or 7 years ago, a researcher did some studies involving an electron scanning microscope and way out physics. His paper concluded that the polishing process actually occurs at a sub-atomic level through an exchange of positive and negative ions caused by a very low electrical charge. In effect, it was believed that the ph differences between the stone, usually alkaline, and the oxide powder mixed with a few drops of vinegar which is then acidic, work as a battery and cause the voltage. When this happens, the stone surface undergoes a change and becomes level.

Hey guys, this is the best I can do until I can locate the paperwork. Some of you may remember Jerry Wykoff had several articles on this subject in the now defunct American Society of Gemcutters monthly newsletter. He also discussed the Beilby theory and the smooth surface theory in his book, Master Gem Polishing. That, however, was published in 1994 and this other info didn't come out until a bit later as I recall. I'm sure this will get a lot of different opinions!!

Cheers from Don at The Charles Belle Studio where simple elegance IS fine jewelry! dcdietz@attbi.com

---

From: John Burgess

> "polishing oxides work on an electrical level"

G'day; I'm going to stick my silly head out again. I'm so skeptical about that comment up there that I don't and can't believe it.

Having polished a good deal of NZ jade using tin oxide on a leather buff I'm inclined to wonder about the 'molecular flow' idea I heard about many years ago. You finally polish jade on a leather disc buff at about 800 RPM with tin oxide and water slurry. But you don't get that mirror finish until you begin to press

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quite hard, the moisture has begun to dry off the disc, and you feel a definite drag on the work piece.

Far longer ago than I care to think about I had the job of polishing steel specimens. These were ground as flat as possible, set in a hard resin, and polished by hand on a series of wet 'n dry papers on a sheet of thick glass with water as lubricant. When one got to 1500 grit carbide, one continued on a slowly rotating disc containing 15,000, and finally 50,000 mesh diamond grit. The result was a truly brilliant mirror finish. But put it under a microscope at 150x magnification and one can see the micro scratches where the ultra fine abrasive removed the surface.

And what did we do with those brilliantly and laboriously polished metal specimens? Why we put them in strong acid and etched away the polish! Stupid? We needed to do that to make the fine crystal structures visible under the microscope.

I still don't know whether to believe in molecular flow with jade or not!

-- Cheers for now,

John Burgess; johnb@ts.co.nz of Mapua Nelson NZ

---

From: Jerry & Norma Holt

Dave, Just the other day I read where the "Bielby layer" theory has been completely discredited. I haven't a clue as to what replaced it. Jerry in Kodiak

---

From: Bruce Holmgrain

As far as I know, the Beilby layer isn't theory. Beilby proved his theory by noting a scratch pattern, polishing it away and causing it to reappear by etching. This was further validated under the electron microscope by G.I. Finch in 1937. I have read more of this in Scientific American in the last couple of decades. The Beilby layer may not form under all polishing conditions. It has been noted that 50,000 grit diamond doesn't produce the Beilby layer thus John Burgess is correct when he notes that the steel that he polished exhibited the scratch pattern. This info is pretty well covered by Vargas.

I'd sure like to read what everyone is talking about that says that Beilby was a theory.

Bruce Holmgrain JA Certified Master Bench Jeweler  
<http://www.goldwerx.com>

---

From: Clyde CC FULLER

All,

Had to jump in here - I've read just about every thing you can imagine about polishing from cab with jade to Yugo sapphires. I lost the last bit of info when they did the study with electro magnifiers or what ever also after Wycoff era. Rick Ford carried on a very informational paper on the subject and also sold and

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got into the colloidal polishes which were great his place burned down I think and the newsletters ceased. There are more studies on polishing than anything else that I have read.

Note: Pre-polish. Pre-polish is the main answer to all polishing problems.

Clyde

from <http://www.ganoksin.com>

+++++

### Grams per Carat - Opal Question

Here is a thread of messages that I found in the Orchid Digest from <http://www.ganoksin.com> concerning getting a carat weight of opals. At first, it seemed like it had an obvious answer, but some good discussion occurred on valuing opal. They were published in May, 2002. 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

From: Sigrid

Hi All, I'm writing in from my wife's account (with her blessing) hoping some of you out there can give me some assistance.

I'm interested in helping out my wife by selling off some of her overstock of opals. None of them have been weighed per carat, but I have an electronic scale that will do that part nicely.

My question is twofold:

1. What is the standard conversion between grams to carats for opals?

and

2. How do I factor in the ironstone backing on the doublets?

Many thanks, Tom

-----  
From: Daniel R. Spierer

Opals are not usually sold per carat. They are usually sold per piece. I have seen some white opal sold per carat but if what you have is boulder opal, that material is always sold by the piece.

Daniel R. Spierer, GG

Spierer Somes Jewelers 1794 Massachusetts Ave Cambridge, MA 02140 - 617-491-6000

spierersomes@earthlink.net www.spierersomes.com

-----  
From: Dave Sebaste

Hi Tom!

> 1. What is the standard conversion between grams to carats for > opals?

There are five carats to the gram, regardless of the gemstone. To get a reasonably accurate weight, you need a scale that will weigh in 1/100 of a gram. a 1/10 gram scale can only be converted to the nearest 1/2 carat. For opals, this may be accurate enough ("ballpark") but for finer/smaller stones, you'd need greater accuracy.

> 2. How do I factor in the ironstone backing on the doublets?

If its an ironstone backing, its most likely a boulder opal or seam opal. A doublet is constructed, and usually has a black backing piece, such as onyx or basinite. If it is indeed a boulder opal, I don't think you need to factor in the matrix, or backing material. Sell it as a boulder opal, by weight, and the buyer should understand. Doublets and triplets are typically sold by calibrated size, rather than carat weight.

Hope this helps!

Dave

Dave Sebaste - Sebaste Studio and Carolina Artisans' Gallery Charlotte, NC

dave@sebaste.com <http://www.CarolinaArtisans.com>

-----  
From: H. Durstling

Hi Tom,

There are five carats in a gram.

Doublets and triplets, (always), and boulder opal (almost always - only once have I ever seen it offered otherwise) are sold by the each rather than by weight, precisely because it \_isn't\_ all gem material.

Cheers Hans Durstling

Moncton, Canada

-----  
From: KP Kelly

If I may I'd like to add a qualifier to your opal comment. Fine opal is typically sold by the carat. Opal in matrix most often is sold by the piece. If the seller quotes carat price for matrix material look out.

-----  
From: Don Rogers

Tom, there is 0.2 grams per carat or 5 carats per gram.

On your second question, you don't sell doublets or triplets by the weight, just by the piece. There are too many variables in the construction of doublets and triplets, including the weight of the backings. Same goes for boulder opal. These stones sell by their "wow" factor. A really nice stone will sell for much more than a not so nice stone. A big really nice stone will sell for a bunch more than a small really nice stone, up to a point. In other words, it will sell for what the buyer is willing to pay and what you are willing to accept.

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Half Page Size:	\$20 per month
Full Page Size:	\$40 per month

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**Email: [webmaster@opalsociety.org](mailto:webmaster@opalsociety.org)**

Don at Campbell Gemstones

From: Beth Rosengard

I agree that it doesn't make sense to sell opal by weight. Would you pay more for a 75 carat white opal with a little pin fire than for a 25 carat black harlequin with lots of red? There are many factors that affect the beauty and value of an opal that have absolutely nothing to do weight.

> If it's an ironstone backing, it's most likely a boulder opal or > seam opal. A doublet is constructed, and usually has a black > backing piece, such as onyx or basinite.

Not necessarily. It is quite common for opal doublets to be backed with ironstone or "boulder." And too many dealers get away with calling these constructs "boulder opal doublets" which implies a greater value than just "doublets." I tried to make this point with a dealer once at a gem show -- that a doublet was a doublet, no matter what it was backed with; he didn't like that...at all! You can usually tell an ironstone-backed opal from a natural boulder opal pretty easily: The opal layer is usually perfectly even and there's a very thin black line (the adhesive) between the opal and the ironstone.

Beth

From: Mark Ruby

> I agree that it doesn't make sense to sell opal by weight. > Would you pay more for a 75 carat white opal with a little pin fire > than for a 25 carat black harlequin with lots of red? There are many > factors that affect the beauty and value of an opal that have > absolutely nothing to do weight.

Beth, White opal with a little pin fire sells for about \$2-5/carat. Black harlequin w/lots of red sells for about \$2000-5000 /ct. That's why opals are sold by the carat. There is quite a range opal prices based on quality (soundness), brightness, color pattern, type (crystal, semi-crystal, opaque), background color. See Paul Downing's book "Opal Identification and Value" for a good overview.

> It is quite common for opal doublets to be backed with ironstone > or "boulder." And too many dealers get away with calling these > constructs "boulder opal doublets" which implies a greater value > than just "doublets." I tried to make this point with a dealer once > at a gem show -- that a doublet was a doublet, no matter what it was > backed with;

You are absolutely right - a doublet is a doublet is a doublet no matter what it's backed with and is sold by the piece (based on that "wow" factor - thanks Don)

> You can usually tell an ironstone-backed opal from a natural > boulder opal pretty easily: The opal layer is usually perfectly > even and there's a very thin black line (the adhesive) between the > opal and the ironstone.

Some doublet makers are cutting the bottom of the opal wavy and using epoxy filled with ground boulder for the bottom. It actually looks pretty convincing. Beware! It's still just a doublet.

Mark Thomas Ruby

SunSpirit Designs Loveland, CO 970 669-7075

From: Jewelers Gallery

> If I my I'd like to add a qualifier to your opal comment. Fine > opal is typically sold by the carat. Opal in matrix most often is > sold by the piece. If the seller quotes carat price for matrix > material look out.

Dear Orchidians, For those of you that don't have much experience buying opal, if you go to a trade show there will be dealers selling any kind of opal, including boulder opal, solid and doublet by the piece and by the carat. Any dealer who sells by the piece probably bought it by the carat.

Rough is bought by the ounce or gram, after it is cut, what you paid for it has to be divided by what's left in carats. Gluing the piece to a backing does not change what you paid for the rough.

I would think that for convenience dealers price their better stones before a show so they don't have to weight and re-weight the same stone for different customers. Jayson Traurig (sp) is a vendor at GLW shows and always has bags of doublets at \$10, \$15, \$20 etc. per carat.

With opal, I have seen similar looking opal in different piles, with very different prices. There is no logic sometimes to how it is priced. Obviously the more intense the color, the higher the price, and some colors are prized more than others, some patterns are prized. Buying opal is a learning experience a little different than other stones.

Solid opal or doublets can craze after you purchase them. Some dealers will trade you out for stones that craze, even if you have them for a long time. Other dealers don't stand behind their material. I lost \$400 on a pair of earrings when one turned cloudy, the company I bought it from doesn't care after the sale. I can take the good one and use it for some thing, but I have to pull the doublet from the 14k gold bezel mounting, and I don't know till I try if it will survive removal, doublets can be chipped easily.

Being an Opalcoholic, I have made a lot more good purchases than bad ones over the years. Seems to be the price to be involved with gemstones that are so beautiful and so fragile.

Richard in Denver

From: Jewelers Gallery

Regarding Beth's posting about doublets having flat backs, I have seen very irregular shaped opal doublets where they used something brown, like glue putty between the curved back of the opal and the stone backing that matched the color of the stone backing material so it looked like a natural boulder opal. Sometimes I can tell that the opal is an opalized clam shell. In my experience no dealers I have dealt with try to pass off doublets as solid opals. Once they tell me the price, if it seems to good to be true, I look carefully at what I thought was a solid, I see the glue seam. If the stone is really beautiful and it is reasonable in cost, and I can set it and sell it, and the customer can wear it and enjoy it with the same care that would be given to pearls, emeralds, aquamarines, etc. (things that need more care), I don't care that it is a doublet. Disclosure applies, along with giving the customer an idea of what a similar opal would cost if it was a solid, up to ten times the cost of a doublet. We have sold a lot of opal over the last several years, and our customers seem to take care of their opals as we don't have unhappy people coming back.

Richard in Denver

From: Rick Martin

> 2. How do I factor in the ironstone backing on the doublets? > > If its an ironstone backing, its most likely a boulder opal or >



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seam opal. A doublet is constructed, and usually has a black > backing piece, such as onyx or basinite.

Dave and All: there are many man-made "boulder" opal doublets on the current market with ironstone backing. They are very well made and can fool the unwary. In any case, doublet or natural, boulder opals are professionally sold by the piece not by weight. The same is true of any assembled opal, doublet or triplet. Opals are sold by carat weight only when they are "naturals," 100% opal.

Rick Martin MARTIN DESIGNS  
from <http://www.ganoksin.com>

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## Solder

by Sara M. Sanford

*Sara M. Sanford is a professional jeweler and founding member and past president of the Creative Metal Arts Guild in Portland, Oregon. Her detailed examination of soldering begins with this discussion of solder.*

Soldering is one of the most basic techniques in metalworking, but also one of the hardest to master. For a very good reason, we are taught in early childhood to fear fire, and the possibility of melting a piece that has a lot of work (and expensive materials) in it is always present. However, as with any process that has a certain mystique about it, understanding how and why soldering works will make us much more comfortable with it. Especially knowing why the process works will let us do some intelligent troubleshooting, rather than simply guessing when a problem arises.

There are five basic areas that make up the soldering process: solder, flux, heat, fit, and cleanliness. If the optimum conditions are maintained in each of these five areas, the soldering process will go smoothly. It is when we begin to "fudge," or get sloppy, that things go wrong. Knowing why something happens will let us solve the problem quickly. Even the pros sometimes have to go back to basics!

Soldering is the process of joining two or more pieces of metal by using a metal alloy whose melting temperature is lower than the metals being joined. Hard soldering is also called low temperature brazing. Soft soldering uses very low melting temperature solder alloys, usually of tin and lead, and is not commonly used in fine jewelry.

Solder is a nonferrous (without iron) metal alloy, the major percentage of which is usually the same as the metal being joined: gold, silver, copper or brass. Gold solder is available in different colors to match various alloys. Because brass and copper solder, both also known as brazing rod, has a high melting temperature and is brittle, silver solder is usually used on

these metals as well as on silver. All of the nonferrous metals (gold, silver, copper, brass, or bronze) that have a relatively high melting temperature can be soldered with either gold or silver solder. Both gold and silver solders are available in different melting temperatures, and are manufactured in several forms.

Forms of solder include sheet, wire, pallions (clippings or chips), and paste. Which form of solder to use is a matter of training and personal choice. I prefer to use sheet, cut into small pallions, because wire solder, being round, will sometimes roll away from the force of the flame; sheet stays where you put it (usually).

Paste solder, a mix of tiny bits of solder mixed with a paste flux, is used primarily by mass producers in machine soldering and is the most expensive form of solder. Knowing how much paste solder to use requires a bit of experimenting.

Melting temperatures of solder are determined by the zinc content: the higher the zinc content, the lower the melting temperature. Zinc is what turns the lower melting temperature silver solders a yellowish-gray; to avoid conspicuous solder lines, use the highest temperature solder feasible. Pits in the solder seam are caused when the solder is overheated and the zinc burns out. Again, using a higher temperature solder (and controlling the heat) will help to prevent pitting.

The most common divisions of melting temperatures in silver solder are:

- IT: the highest melting temperature, used on fine silver when enameling;
- Hard: used for bezels and as a first step when doing multiple soldering;
- Medium: used mostly when only one or two steps will be done;
- Easy: used as a final solder or when soldering on findings; and
- Extra Easy: used primarily for repairs (distinctly yellow in color).

Gold solders come in Hard, Medium, Easy, and Extra Easy as well as different karats and colors. One manufacturer has recently come out with a Medium Hard silver solder, with a melting temperature between that of hard and medium solder.

Because sheet and wire solder are indistinguishable from regular sheet and wire metal, these solders should be marked as soon as they are purchased. Sheet solder can be scribed with 1, 2, 3, or H, M, E (for hard, medium, easy); wire solder can be hammered or even have knots tied in one end. In order to distinguish between the different melting temperatures, some schools like to use a different form for each: wire for hard, sheet for medium, and flattened wire for easy.

Why use different melting temperature solders? When fabricating a complicated piece, using different melting temperature solders will help prevent the previously soldered joints from remelting, and either shifting or coming unsoldered. (Additional techniques to prevent this will be discussed separately.)

There is no industry standard for exact melting temperatures, and each solder manufacturer has its own specifications. Therefore, buying all your solder from one source will help keep the different melting temperature solders straight, although a combination of solders from different manufacturers may give you more versatility.

You will often see two temperatures listed: a melting point and a flowing temperature, which is higher. The melting temperature is when the solder starts to melt, and the flow point occurs when the solder is completely molten. The difference between these two temperatures, or spread, can be from 250° F to more than 1000° F. It's important to know the spread, since it

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will affect where and for how long you apply the heat. Experimenting with solder from different sources will give you the opportunity to find just the right combination that suits you.

Source: <http://www.lapidaryjournal.com/tech/l298tech.htm>  
Via Strata Gem, 5-2003

#### Success

At age 4 success is not wetting your pants.

At age 12 success is having friends.

At age 16 success is having a driver's license.

At age 20 success is having sex.

At age 35 success is having money.

At age 55 success is having money.

At age 65 success is having sex.

At age 75 success is having a driver's license.

At age 85 success is having friends.

At age 95 success is not wetting your pants.

From Outcroppings 11/02, VIA STRATA GEM, JULY/AUGUST 2003

#### Dendrite Mineralogy

Caltech News Release via California Geology (10/79)

Dendrites--crystalline, black, fern-like patterns that resemble forest scenes--have captured the fancy of collectors for centuries. Dendrites, normally deposited on fracture surfaces in rocks, are formed from manganese that has been leached from surrounding rocks and soil by water.

For many years, scientists presumed that dendrites were composed of pyrolusite, a manganese oxide common in ore deposits. However, this mineral identification could not be confirmed because dendrites are formed from crystals so small that they cannot be characterized by X-ray diffraction, the standard diagnostic tool for analyzing minerals.

Recently, California Institute of Technology geochemists George R. Rossman and Russell M. Potter applied infrared spectroscopy, an analytical technique that illuminates mineral samples with infrared radiation, to identify the mineralogy of dendrites. Because specific minerals absorb specific patterns of infrared wavelengths, infrared spectroscopy has become a valuable tool for analysis of very fine-grained minerals.

Results of infrared spectroscopy analyses demonstrate that dendrites are formed by any one of several manganese oxides -- none of them pyrolusite. Manganese oxides are differentiated on the basis of the internal arrangement of their atoms and the content of some minor elements. For example, the manganese oxide romanechite forms dendrites in pegmatites of the Black Hills region of South Dakota; hollandite dendrites are from Afton Canyon, California; todorokite is found in the gem mines of Pala, California; and cryptomelane is from the southwestern United States. Each dendrite is formed from a specific manganese oxide. No mixing of manganese oxides within the dendrite was observed in the samples tested.

Infrared spectroscopy has also been applied to the analysis of desert varnish [see [Origin of Desert Varnish](#)

(<http://www.fgms.org/lithosphere/articles/desertvarn/desertv.htm>) . It was found that desert varnish is about 70% fine clay and 30% manganese and iron oxides. The manganese mineral in desert varnish is the oxide birnessite. In comparison, dendrites contain virtually no clay, and none of those analyzed thus far has contained birnessite.

The preceding article was published in the May 1993 issue of Lithosphere, the official bulletin of the Fallbrook [California] Gem and Mineral Society, Inc; Richard Busch (Editor). The material is in the public domain, and may be republished freely.

#### Zircon Not Zirconia

Many people assume that the December birthstone Zircon and Cubic Zirconia are the same. They are not. The Cubic Zirconia is a manmade diamond substitute; Zircon is a natural gemstone. Zircon has the unfortunate reputation as being the "poor man's diamond". This reputation was developed centuries ago when gem dealers found that heating cinnamon colored Zircon would make it turn permanently clear.

It was sold for years as "Matura diamonds" referring the location where the Zircon was first found. The reputation has remained. However, Zircon is a gemstone with a wide variety of colors that rival corundum and tourmaline. The hues range from blue, green, yellow, orange and browns. The many varieties make Zircon a favorite of collectors. The variety colors combined with the highly refractive nature make Zircon jewelry a wonderful December gift.

From The Crystal, 12/02, The Rock Collector - 3, 2003

#### A Shop Mini-Hint

After a tube of epoxy has been opened, dab a bit of Vaseline on the threads. The cap will not stick and mess up your tube. Also put Vaseline around the rim of your tumbler before bolting on the lid. It makes a tighter seal and it will be easier to remove the lid. - author unknown

from The Jaspalite, via The Rock Collector, 1-2003

#### December Gem & Mineral Shows

**5-7--GREENSBORO, NC:** Show and sale; Greensboro Gem and Mineral Club; Greensboro Coliseum, 1925 Lee St.; Fri. 10-7, Sat. 10-6, Sun. 10-5; adults \$3, students and children \$1; contact Joe Maguire, 1615 Wilton Dr., Greensboro, NC 27408, (336) 288-7452; e-mail: [joe\\_maguire@prodigy.net](mailto:joe_maguire@prodigy.net).

**6-7--ORANGEVALE, CA:** 40th annual show; American River Gem & Mineral Society; Orangevale Grange Hall, 5807 Walnut Ave.; Sat. 10-5, Sun. 10-5; adults \$1, children 12 and under free with adult; contact Paul Daly, (916) 725-6578.

**6-7--SAN BERNARDINO, CA:** Show, "World of Rocks: 2003"; Orange Belt Mineralogical Society; San Bernardino Women's Club, 503 W. 3rd St.; Sat. 10-6, Sun. 10-5; free admission; contact Lyle Strayer, 2980 Duffy St., San Bernardino, CA 92407, (909) 887-3394; e-mail: [gilhamgh@sce.com](mailto:gilhamgh@sce.com).

**13-14--LOS ANGELES, CA:** Show, "SoCal GemFest"; Mineralogical Society of Southern CA; Natural History Museum of Los Angeles County, 900 Exposition Blvd.; Sat. 10-5, Sun. 10-5; free with museum admission, adults \$8, students and seniors \$5.50, children 5-12 \$2, children under 5 and Museum Members free; formerly The Pasadena Show; more than 50 dealers, dozens of special exhibits, unique jewelry, crystals, gems and minerals from around the world, displays, fluorescent minerals, rock, gem, mineral and meteorite identification, Museum Treasure Hunt and free mineral samples for kids, holiday gift ideas, children's holiday crafts program; contact Bob Rhein, NHMLAC, (213) 763-DINO; Web site: [www.mineralsocal.org](http://www.mineralsocal.org).

