

The Opal Express
 American Opal Society
 P.O. Box 382
 Anaheim, CA 92815-0382



Member

Member



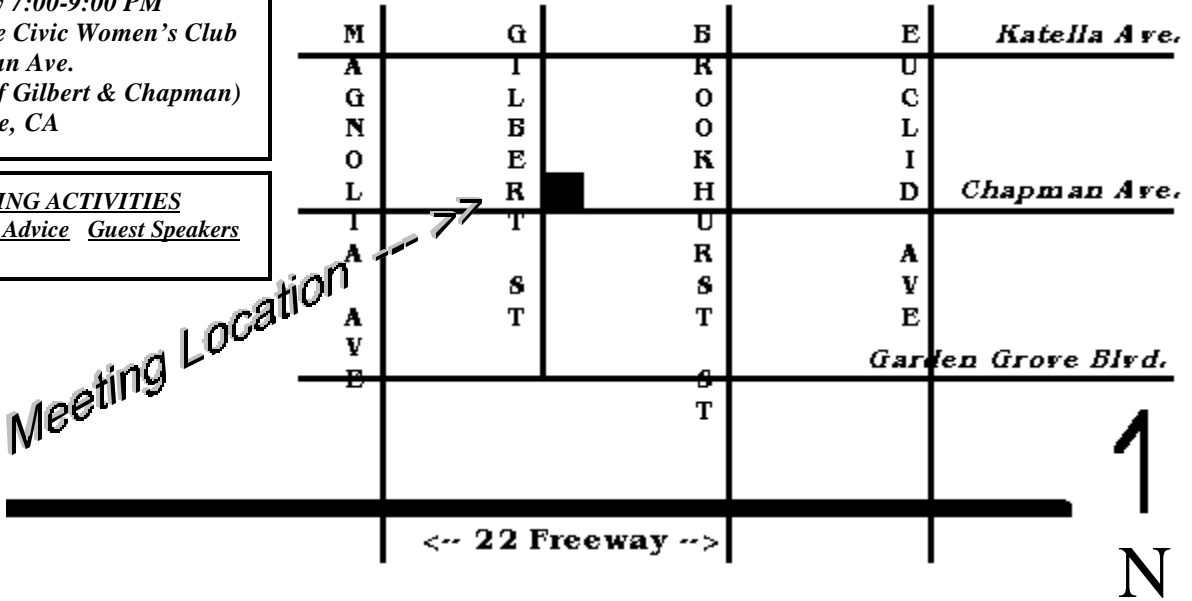
Volume #30 Issue #7 July 1998



TO:

GENERAL MEETINGS —
 2nd Thursday 7:00-9:00 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



American Opal Society Officers

Wes Roth	President	(714) 897-2984 email wesroth@earthlink.net
Carol Bova	Vice Pres.	(818) 845-8610 email bova@bovagems.com
Mike Kowalsky	Treasurer	(714) 761-4876 email mykowalsky@aol.com
Pete Goetz	Secretary	(714) 666-2084 email mpg1022@aol.com
Russ Madsen	Editor	(562) 425-9788 email 76550.1366@compuserve.com

DUES POLICY REVISED - effective 1/1/98

Henceforth, memberships begin in the month a person joins the Opal Society. This simplifies the fee structure and will reduce questions and errors in dues payments.

Three (3) Dues Rates are for families and **are now based on your county of residence.**

Rate #1 (\$26): **Local area** = members who reside in Los Angeles, Orange, or Riverside counties.

Rate #2 (\$20): **California & USA** = all US addresses other than local counties.

Rate #3 (\$30): **Foreign** = all memberships outside USA.

SENIOR DISCOUNT: Age 65 and over, deduct \$5 from the above rates.

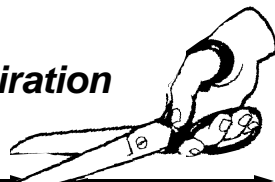
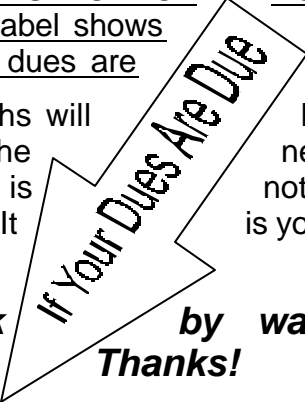
Label Changes: Your address label now displays your dues expiration date as MM-YY where MM is the month and YY is the year your dues expire. Expiration dates also appear in the membership roster.

Are Your Dues Due Now? PLEASE CHECK YOUR ADDRESS LABEL or the membership roster if you are listed there. If your label shows DUE NOW. If the date is older, your dues are overdue.

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.

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.

Please help us make this work by watching your expiration date and renewing promptly. Thanks!



DUES RENEWAL FORM

(membership renewal form rev. 1/1/98)
d:\ameropal\news\trsf\forms\dues_due.
pub



American Opal Society, Inc.
P.O. Box 382
Anaheim, CA 92815-0382

Thank you for continuing to support your American Opal Society!!

Make check or money order payable to:
American Opal Society, Inc.

DUES RENEWAL RATES (select one)

- **
- 1) **LOCAL AREA member \$26.00**
(addresses in Los Angeles, Orange, & Riverside counties)
 - 2) **CALIFORNIA & USA \$20.00**
(all addresses outside local area counties)
 - 3) **FOREIGN \$30.00**
(all addresses outside USA)
- ** **\$5 SENIOR DISCOUNT = Age 65 or**

DEALER LIST: Yes, include my name/address on a list provided to Opal Dealers selling at the most recent Opal Show.

(if yes, please sign or initial here) _____
date

without your signature here you

MEMBERSHIP ROSTER: Yes, include my name and/or address and/or phone information in a published AOS membership directory...

[Please circle any of these → **NAME** / **ADDRESS** / **PHONE** if you prefer a partial listing.]

without your signature here you

NAME: _____

ADDRESS: _____ APT #: or PO BOX: _____

CITY: _____ STATE: _____ ZIP: _____

COUNTRY (IF OUTSIDE U.S.) _____

NAME BADGE ORDER FORM: (OPTIONAL)

Number of badges ordered _____

(\$5.00 EACH - includes engraving)

PLEASE PRINT NAME AS YOU WISH IT TO APPEAR ON YOUR BADGE using up to two (2) lines of

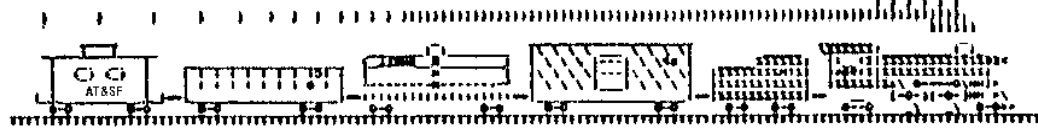
Please indicate any name or mailing address changes

The OPAL EXPRESS

JULY 2002

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American
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Society

Issue 7



President's Message

Greetings, from Wes Roth

Summer has arrived and Russ Madsen has just returned from the Great Black Rock Desert of Northern Nevada and hopefully will have a few words and some samples of his trip to the opal digs.

Hopefully have a lecture lined up on Opal and Fire Agate, but not confirmed as yet.

Congratulations to Olive M. Colhour, nationally known gemstone carver and lapidary artist who just celebrated her **100th birthday**. She has written many articles for Lapidary Journal as well as lectured over the years and started in the arts at the age of 57. **HAPPY BIRTHDAY**

Hope to see you at the meeting
Wes Roth
President

From under a different hat.....Since 1896, the beginning of what is considered the Modern Olympics only two countries have been involved in all of the Games. Answer somewhere in the news letter courtesy of our wonderful editor.

↔ ↔ ↔ ↔

BLACK ROCK OPAL DIGGING REPORT

While I did find opal, time is too short to compile a report for this issue. Look for the story in the August Opal Express...and do watch the opal issues of R&G and LJ for an article about the **Angela Opal** found during 1996 in the Black Rock area. The several palm-filling pieces of this find weighed together something on the order of 1780 carats! Bigger than the famed Duffield opal from the same area.

-rgm ☼

Opal Town Set To Kick Up Its Heels

(this item was sent to us by Murray Willis of Australian Opal Mines. Jay Carey reports Murray has a nice web site at <http://www.austopalmines.net.au>)

The Outback opal-mining town of Coober Pedy will celebrate the 1998 mining season with a special festival over the Easter weekend. Mining is carried out mostly during the cooler months – from April to October – with many miners leaving the town during the hot summer.

“The Opal Festival heralds their return to mining and is a celebration of friendship and town spirit,” says festival spokeswoman Ms. Judith Blechmore.

She says the three days of varied activities also

(Continued on page 3)



Work Shop Information...

The Opal Society workshop is located in a light industrial complex in Fullerton. The address is Unit #9, 651 N. State College Blvd.

Directions: exit the 91 Fwy onto State College Blvd. and go north. Proceed through the intersection of Orangethorpe continuing a short distance further on State College. Go over the railroad tracks and turn left into the complex on the west side of the street. If you go over the second RR crossing turn around. Proceed behind the front row of businesses and make your first right. Then follow the road around to the left. The workshop has a large "9" over the door.

Only AOS members may use the equipment and workshop. You will be required to sign a release form as well.

Workshop Schedule on Page 5 shows dates/times and appointment instructions. ☼

DATES TO
REMEMBER

Directors Mtg
Monday
July 6 7PM

General Mtg
Thursday
July 9th 7PM

INSIDE THIS ISSUE							
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Coober Pedy Opal Festival

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celebrate the area's rich mining heritage.

"It highlights the spirit of early opal miners who walked, or pushed carts, more than 850km from Adelaide," she says.

The rush started in 1915 after teenager Willie Hutchison discovered opal on February 1. He was searching for water when he found pieces of surface opal. Eight days later, the first opal claim was pegged. Today, 80% of the world's opals are mined at Coober Pedy, Mintabie and Andamooka.

Ms. Bleechmore says hundreds of visitors are expected to visit Coober Pedy for the festivities which will include noodling for opal. The celebrations will kick off at 9:30am on April 11 with a parade along Hutchison St to the new oval, where opal noodling will run from 11am to dark. In their quest to find some opal, visitors can buy time in the special ultraviolet noodling darkroom. "Ultraviolet light makes the opal glow in the dark so it can be seen more easily," says Bleechmore.

"Visitors will not only be looking for opal but for special designated value tokens which can be exchanged for rough or cut opal from participating Coober Pedy opal shops."

There also will be demonstrations of mining drills and opal cutting. Visitors can watch as their opal is cut and polished.

Town walks – guided and unguided – will give visitors an understanding of the underground way of life, with some dugout homes open for inspection.

Ms. Bleechmore says some of the town's 49 nationalities will host marquees.

There will be food, drinks, a warm welcome and displays put on by many of the cultures represented here," Ms. Bleechmore says.

Team events linked to opal mining will include dump shoveling and shifting, winching and "bomb" throwing.

At dusk on the Saturday, a fireworks display will be held and there will be a dance under the stars. At 6:30am on the Sunday, a special combined Easter church service will be held at the Big Winch. From 12:30pm, there will be the chance to play golf on the unique desert course.

Coober Pedy has a variety of accommodations, including the Desert Cave Underground Hotel, motels, apartments and caravan parks. ☼



Name Badges...

Price per badge is \$5 which includes the badge itself and engraving of up to two lines of text: one line for your first and last name and, if you wish, a second line for nickname or if applicable, your opal related business name. These engraving options give members flexibility to include many types of identification.

Please allow 3 to 4 weeks for completion of engraving. ☼

Scientific quiz...

(As told by my young friend Hanson Boyd)

By Russ Madsen

It seems Hanson and a group of other children were recently invited to a gathering at a local beach. They were told the eggs of the world's largest sea turtles are often found along this particular stretch of sand. Furthermore they were given the scientific name of this watery creature – *hydro melonis*.

With this abundance of information they were given two tasks. First, they were asked to describe the eggs. Second they were encouraged to search the sands and see if they could find at least one example. After some discussion and searching one of the children came back carrying an object she was sure was a fine example of the egg of the sea turtle in question.

Your task, readers, is to tell us the size of the eggs and their color (both outside and inside); then offer an explanation of where the girl found her prize and whether it was in fact the egg of a *hydro melonis sp.*, Giant Sea Turtle.

Tune in next issue for the answers! ☼

California Federation of Mineralogical Societies

Presents the 59th Annual

MINERAL AND GEM SHOW

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in beautiful Monterey, California

July 3, 4, and 5, 1998

Hosted by

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Chairperson: **Kay Carter (408) 422-0530**

Admission \$4.50

\$.50 off with flyer



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Editor---Russ Madsen

Please address all inquiries to:

The Opal Express, P.O. Box 382, Anaheim, CA 92815-0382

E-mail 76550.1366@compuserve.com

(Deadline for items: 15th of the month prior to each issue)

WELCOME NEW MEMBERS

#1171 Homer Schmitz
#1172 Leonard Toelk



Membership Roster Changes/Additions

New Listing - Homer Schmitz	18 Fox Meadows	Sunset Hills MN 63127 (314) 843-4058	Member # 1171	Dues Expire 99-06
New Listing - Leonard Toelk			Member #1172	Dues Expire 99-06
Renewal - Gabriel Ayala	708 E. Arbolado Dr.	Fullerton, CA 92835 (714) 446-8807	Member #1130	Dues Expire 99-06

The McCondra Report

By Barbara McCondra

The Prima Donna of Lightning Ridge

Many factors contribute to the identification of such a superb gem black opal. The location of its mine of origin is the first consideration, Australia being the most desirable as the gem quality opal there is of sedimentary formation rather than volcanic. It is Australian black that I refer to now: The blackness of the base color, the brilliance of the fire, the predominance of red, the richness of the red, the quality of the other colors with the red (heliotrope, yellow, cornflower blue, electric green, gold, bronze) the rareness and desirability of the pattern of the fire, the directionality of the fire (is the color play "ON" at all angles of viewing), the fluidity and mobility of color and pattern, the shape and size of the stone, and the overall composite appeal of all these factors. All of these are part and parcel of the gem look, that special magic, hence gem value, of the opal.

Opal aficionados have their individual preferences, but market consensus gives top dollar value to red on black. The Red Robin, Red Admiral, Black Prince, Pride of Australia, Firestorm, The Flamingo, The Cardinal, The Southern Princess, and The Flame Queen are among the list of precious, world renowned, red on black gem opals. A list could be made too of many secretly bought and sold exquisite red stones if it all were not so exactly that, secret!

The lists go on and on. Both the famous named and the secret red on black beauties commanded royal prices.

The colors within an opal have been observed by elec-

(Continued on page 5)

ITEMIZATION

ITEM: Leonard Toelk - please email me at 76550.1366@compuserve.com. There are a couple of application details I need to mention by return email. Thanks, Russ.

ITEM: We have received a nice set of posters from Len Cram (signed). Thank you Len! Len's letter will appear in the August Opal Express, wherein he also describes his newly released book. It sounds fantastic!

ITEM: The Opal Queen Mine in the Virgin Valley has sent along a flier which indicates they now permit digging in the bank. Fees are \$40 for bank digging, \$15 for tailings digging. Mine to be open from June 20th to Sept 7th. Web page is <http://www.opalqueen.com>

ITEM: This issue of the Opal Express is being put together well ahead of time as your undaunted editor is going on VACATION! We will return at the end of June, hopefully with a load of opal from northern Nevada. We expect to spend some time at a couple of different sites.

As primitive man so cherished a hot, red fire in the blackness of night, so do gem lovers of the world value above all other opals, the red on black opal. Every gemstone has its prima donna and the red multicolor black opal can command \$20,000 plus per carat



Prima Donna of Lightning Ridge

(Continued from page 4)

tron microscopes to be the result of the breaking up of light into spectral colors. Red is the color caused by diffraction of light at the interface of the voids which are created by the three-dimensional grates of 3,000 to 4,000 angstrom wide silica spheres. The diameter of the spheres control the size of the voids. For simplicity, envision stacks of egg cartons with the egg cups representing the silica spheres and the spaces between the cups, the voids.

To explain the blackness of the opal from which the red fire flashes is not as easy. I can tell you that all potch (opal with no fire/common opal) is made up of irregularly shaped and irregularly stacked silica spheres. However, potch can be many colors ranging from clear, white, yellow, green, orange, red, gray, leady gray, charcoal, black, to glassy black. There is controversy over what it is about black potch that makes it so black. These assorted theories range from formation in black swamp water, carbon molecules, manganese presence, to properties inherent in the structure that causes absorption of white light resulting in non-light or black. I leave this argument to the scientists.

To the romantics, the poets, the opalholics, I liken the magic of the red on black to the red heart of Australia, its fiery desert sunsets, its redback spiders (themselves tiny replicas of a black cabochon with a bloodred spot) that appear to be the guardians of every opal mining shaft, and the dancing flashes of red in a black Antarctic sky known as the Aurora Australis.

To the investment minded collector I equate the red on black opal to the pink diamond, the Burmese pigeon blood ruby, the Colombian blue green emerald, and the Tahitian Peacock or Aubergine black pearl.

To the historian I tell the tale of hope for another season of mining being paid for with the proceeds of a red on black beauty found by a red eyed gouger in the face of his drive fifty feet underground in Lightning Ridge, Australia. I tell you of the old-timers in the early 1900's that used to throw away the beautiful blue/green stones because it was only the red on blacks that were marketable. Many a modern day miner has made money on processing the throw away stow dirt from that time frame. Nearly with tears in my eyes, I tell you of the famous "Black Prince", which was dropped onto the floor and broken in two, but due to its good size and quality still retained great value.

Be it past or the present, each miner dreams of red on blacks as he stares into the comfort and company of his evening fire. He is mesmerized by the red glowing coals into reminisces of long gone red beauties he has mined or had the privilege of viewing. Mostly he conjures up visions of the prized red on blacks his day's traces promised him will be forthcoming, perhaps in the next few tons of dirt he shifts. ❁

WORK SHOP SCHEDULE

Be sure to check here for workshop schedule updates. The dates listed below are those available to the AOS in our time share agreement with the Searchers. The shop is presently being opened to members on Wednesday nights but...**Please continue to contact Stan McCall by calling him at Lapidary Intl. (714) 827-5680 if you plan to attend a shop session.**

July 1998 AOS Workshop Dates

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

WORK SHOP RULES

These rules are effective October 1, 1997. Please see newsletter for monthly shop schedule.

- 1) Shop may only be used by AOS members.
- 2) Shop users must sign liability waiver.
- 3) Shop users must sign in. Shop supervisor will maintain sign-in list and collect usage fees.
- 4) Shop usage will be in sessions on scheduled days as noted below:
 - Session #1 10AM - 2PM
 - Session #2 2PM - 6PM
 - Session #3 6PM - 9PM
- 5) Shop usage fees: effective immediately...
SHOP USAGE FEE IS \$3 PER SESSION.
- 6) To assist us in scheduling, shop sessions need to be reserved in advance. Please contact Stan McCall or any member of the board of directors to reserve shop time.

Making Opal Doublets and Triplets

By Richard O. Martin

(Newsletter editors and others, please be aware the author specifically reserves reprint permission and copyright on this revised version of the article which first appeared in Lapidary Digest.)

NOTE: These are methods I've used for years, and some of these techniques have been passed down through a couple of generations of lapidaries. Other cutters may disagree with these ideas or have better ones. Let me know: I'm always up to learning new tricks. Everything put forth here is based on personal experience. I use a Diamond Pacific Genie, but the methods should be easily adaptable to nearly any sort of lapidary equipment. If you are new to opal-cutting, I would recommend you spend some time thoroughly studying the subject of doublets and triplets before spending much money on opal rough. Go to shows, talk with experienced opal cutters and read as much as possible on the subject. There are good books and videos available.

DOUBLETS: An opal doublet consists of two parts: a piece of precious opal that is too thin to be cut as a solid (sometimes called a "natural"), and a black backing material. The backing accomplishes two basic things. It provides strength for the thinner opal and intensifies the colors and brightness of some opals. Sometimes opals that are thick enough to be cut as naturals are backed solely to intensify the color. In my experience this is especially true of Australian "jelly" opals and some semi-crystal opals from Brazil and Australia.

TRIPLETS: An opal triplet is made of three pieces: a backing and a thin slice of opal, as described above, and a final top layer of transparent material such as crystalline quartz. Triplets make it possible to enjoy the beauty of extra-thin opal that would otherwise be wasted. I have seen various other materials used for caps including glass, plastic, and clear synthetic spinel. My personal recommendation would be to use nothing softer than quartz. Bulk optical quartz is readily available for cutting caps of any size. Some firms used to offer a variety of pre-cut quartz caps in rounds, ovals, rectangles, marquises, etc. but I don't know of a supplier at present. Most calibrated caps available on the market in recent years, even though sold as "crystal," have been cast from glass in Germany since the Australian triplet industry (the consumer of most of these caps) now uses glass for both caps and backing. One source for calibrated "crystal" caps is Alpha Supply, Inc., address below.

BACKING MATERIAL: This is largely a matter of personal preference. Black is the standard color for maximum color contrast but I have seen red jasper, dyed blue chalcedony and materials of other colors used. At various times I have used black obsidian, black jade, basanite and black opal potch. There are probably other good choices, like black onyx. My personal preferences are basanite (perhaps out of habit) and plain black opal potch. For better quality doublets I would only consider using opal. Obsidian tends to be too translucent to my eye, and black jade can be both

difficult to find and a bit tricky to polish, generating too much heat for an epoxied joint in my opinion, although some opal experts like Paul Downing strongly recommend it. Basanite is the name given to a fine-grained microcrystalline basalt that is dense and takes a very nice polish. I used to collect my own and a mail-order source is listed below. (Basanite is also defined as a "velvety black quartz used for testing the color of the streak of metals <touchstone>," and as black jasper." But the name is also applied to the black basalt as described).

WHAT KIND OF OPAL? Let's pause and think a moment. Each person reading this may have a different image of opal in mind right now. Some will see chunks with fire lines running through them, others will see the ultra-thin slices that come from the wire saws in Australian triplet factories. Others will see something entirely different. The kind I have in mind is mainly the white/gray or "light" opals that come predominantly from Coober Pedy, Australia. Some dealers sell "triplet opal." This rough is too thin to cut naturals but often has extremely bright crystal opal fire lines running straight through the rough, edge to edge. This type of material makes superb doublets and triplets because the multiple fire lines are flat, wide and transparent. They are sometimes separated by bands of white opal potch. It is important to grind all the white potch away until the fire line is completely exposed. Any potch left between the fire line and backing or cap will dull the opal's brilliance. The same is true of the top, if the opal is to be made into a triplet.

I've cut hundreds of triplets from the Spencer, Idaho opal deposit, and it's amazing how beautiful and bright even the thinnest fire lines can be. Spencer opal has been deposited in very flat layers, ideal for triplets.

I've cut hundreds of triplets from the Spencer, Idaho opal deposit, and it's amazing how beautiful and bright even the thinnest fire lines can be. Spencer opal has been deposited in very flat layers, ideal for triplets. One can often even select the final flash color for the triplet by grinding through a green layer, for example, to expose a single red one. The fire lines can usually be seen from the edge of the piece. This type of work takes extremely careful, precise grinding and lots of practice, but the results can be astonishingly beautiful. I'm sure the same thing can be done occasionally with opal from other sources.

Not all opal is suitable for doublets and triplets. One of the objects of doing all this work is to enhance the opal's color by placing it against a black background. If you start with milky opal, you'll just end up with a chunk of milky opal glued to a funny-looking black rock. The background won't be visible. This applies to both doublets and triplets, so be careful in selecting the right material.

HOW TO BEGIN: The first thing to do is make all the parts flat. You can lap them on a flat lap, or grind more rapidly on vertical wheels. Once I've found the color layer I want to use in the opal rough, I grind around the edges until I can see the full extent of the fire line. You want the maximum amount of color to be exposed over the largest possible area. Once I've determined which layer I want to expose, I use the fast-grinding vertical wheel to quickly grind away as much potch

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Making Opal Doublets and Triplets

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as possible until I'm close to the fire line. After careful grinding to orient the grinding plane as exactly as possible to the color plane, I hold the opal rough in one spot against the face of the wheel and rotate it left to right about 180 degrees, using wrist action, until I develop a basically flat surface. I check often to make sure I'm not grinding the fire line away, and that the direction of grinding is "dead-on" to the broadest and brightest patch of color. (This technique works for flattening the backs of cabs, too.) It's a lot faster than trying to grind a large flat area all at once by flat-lapping, although it should be followed by true flat-lapping to obtain a precise surface and to determine how deeply to grind into the fire line. Do not pre-polish or polish the faces of backing material or opal to be joined! You want them slightly rough to be able to "grab" the epoxy. I usually don't grind beyond 600 at most.

Once you think the opal and backing are flat, try fitting them together to see that they join nicely. If you're making a triplet and cutting your own cap, flatten one side of the cap material, also, removing any saw marks. The calibrated quartz caps are tumble-polished (I don't know about the glass ones) and there is usually a "tumbling dimple" on the back. It is necessary to grind the "dimple" away on a flat lap. The back need not be polished: epoxy serves as the "polish" when the triplet is assembled.

To test the finished appearance of triplets, here's another little trick. Dip a Q-tip into Opticon (DON'T USE HARDENER!!) and "paint" the opal with it. Then select a polished cap (or polish one) and set it on the opal. Opticon will more closely represent the finished look of the triplet after epoxying than water. A rule of thumb to judge whether a high or low-dome cap should be used is: with the cap in place, hold the slab at eye level and look through the side of the cap. If you don't see color from the opal throughout the cap and only see clear cap material, it's probably best to use a low dome. A high dome should show color from all angles. You'll quickly discover that thick caps magnify the fire pattern while thin ones look more natural. I personally like the magnification effect on some broad flashfire opals but think it makes small patterns like pinfire look unnatural. You'll have to experiment until you find a combination you like. After testing the appearance, you may decide to do a bit more grinding. Clean off the Opticon carefully with acetone before proceeding.

GLUING TO THE BACKING: Once you're satisfied all surfaces are ready, the first step in making both doublets and triplets is gluing the opal to the backing. Here's a trick to keep air bubbles from showing between the opal and backing material. Spray paint the exposed opal on the side you plan to glue with a good quality dead-black automotive paint. Let the paint dry thoroughly. (To be sure the paint won't be dissolved by the type of epoxy you're using, test it before using it on your opal). Scrupulously clean the opal with acetone before painting to eliminate oils, etc. Trim the backing material until it's slightly larger than the opal being

backed, then clean it with acetone also. Use suitable precautions with acetone -- avoid inhaling the fumes and don't get your fingers wet. Let the backing air-dry and DON'T TOUCH EITHER PIECE AGAIN BEFORE GLUING. Have on hand some flat toothpicks and a small piece of aluminum foil. You'll also need a larger piece of aluminum foil sitting on a very flat surface.

Others may have suggestions for alternative adhesives but I recommend using Hughes' crystal clear Epoxy 330. There's a type that yellows when it dries. Avoid it, as well as fast-drying epoxies that are not as strong, in my experience.

A new type of high-strength epoxy called HXTAL has been recommended (source address below). While this adhesive appears to have lots of lapidary applications, including doublets and triplets, it is quite expensive. I have used the

Hughes 330 for well over 20 years and have never had a problem with it I didn't cause myself through improper cleaning or touching parts before they were joined. I have never used HXTAL so can't make any recommendation about it, although users say it never turns yellow and maintains its strength indefinitely.

Okay, here goes! Squeeze equal amounts of epoxy from each tube onto the small piece of aluminum foil and mix them thoroughly with a toothpick. Carefully spread a VERY thin layer of epoxy on each part of the piece to be joined. Place the backing material on the flat, foil-covered surface, and carefully position the opal slide on it. Push down firmly to eliminate air and excess epoxy and let the assemblage dry thoroughly. You don't have to worry about

trapped air bubbles showing between the backing and the opal because of the painted surface on the opal, so this procedure is fairly straightforward. I prefer to let the epoxy air dry, but curing can be hurried a bit by applying gentle heat from a light bulb. Don't let the opal get too hot! If air-drying, let the epoxy cure for several days, especially in cool or humid weather.

Okay, now you have a chunk of opal glued to a black slab. If you're making a doublet, all you have to do is finish the top. Contour the opal top and cut the outline of the backing material to the shape and size you want. (See special doping suggestions below). Doublets are often cut with flat tops, keeping the edges of the stone fairly thick so they won't chip or break when prongs are bent over them. But the shape you cut will depend on the thickness of the opal.

TRIPLETS: The next step is to flatten the still-rough side of the opal. If you're working with material like Idaho opal that may still have usable fire lines, use a thin blade in a trim saw to cut as closely to the selected fire line as possible. This can be tricky at first. Don't try to cut right next to the fire line. Leave at least 1/8" of opal between the saw cut and backing. One way of making the saw cut parallel with the backing is to notch a trial cut at the right depth, then continue making notches all around the circumference of the stone until the cutting line is clearly established. Otherwise, if the opal piece is thin, simply grind it flat as above.

To test the finished appearance of triplets, here's another little trick. Dip a Q-tip into Opticon (DON'T USE HARDENER!!) and "paint" the opal with it. Then select a polished cap (or polish one) and set it on the opal. Opticon will more closely represent the finished look of the triplet after epoxying than water

Making Opal Doublets and Triplets

(Continued from page 7)

This is where a bit of judgment is needed: how much is enough? Again, if you leave milky potch it will ruin the appearance of the finished stone. I grind well into the fire line...cautiously.

APPLYING CAPS: You'll need the same supplies and arrangement used for gluing the opal to the backing, as well as a lead pencil with a fresh rubber eraser. Have everything arranged in advance so all is handy and within reach. Mix the epoxy slowly on a small piece of aluminum foil with a toothpick. Avoid mixing air into it. When it's ready, heat it under the lamp a bit to liquefy the epoxy and help air bubbles move to the top. If bubbles are apparent, let the warm epoxy sit for a short time to allow them to break. Bubbles are the bane of triplet-making. Air trapped between the opal and cap ruins the appearance of the finished piece by forming shiny circles that reflect light. The only way to cure this problem after gluing is to grind the cap off and start again.

Ready? Apply a VERY thin layer of epoxy to both the cap bottom and the opal, then carefully slide the cap onto the opal. The epoxy must be thin enough so it won't build up around the edge of the cap. Applying caps can be complicated by epoxy sticking to the fingers, so be patient and carefully clean your fingers before touching the cap again. It's difficult to remove epoxy 330 smears from caps. (In the section on dopping I mention that 5-minute epoxy can be removed from a stone with a scalpel blade, and this is generally true with the kind I use -- Tru-Bond -- especially when it's fresh; but don't let it dry for a long period before removing it. Epoxy 330 dries much harder than the 5-minute variety). The positioning process is made easier by using the rubber pencil eraser to move the cap around until it's in the right place. Then place the light bulb a few inches from the triplet and re-heat the piece gently. When the epoxy appears to be fairly liquid, hold the pencil eraser against the cap and use firm straight downward pressure to force all air from between the two surfaces (you can see the bubbles under triplet caps easily with an Optivisor). Keep up the pressure on the cap until no more bubbles can be seen.

It's important to use as little epoxy as possible because the heat will result in more epoxy than you ever imagined could issue from a joint that size, and it will stick to everything in sight! That's why you want to have a layer of aluminum foil under your piece. If the foil gets glued to the triplet, it can be removed a lot easier than if the piece is glued to a table, a workbench or an innocent bystander. And if the surface (or workpiece) isn't level, the heated epoxy will work as a very good lubricant and the cap will tend to slide away from the position you want. This is particularly true if you keep the heat on so I prefer to check the positioning fairly often for the first hour or two, then use the heat lamp to hasten drying when the pieces are tack-bonded. Sometimes I clamp pieces together with clothespins or other appropriate clamps (but don't let them become glued to the assemblage!)

Air trapped between the opal and cap ruins the appearance of the finished piece by forming shiny circles that reflect light.

DOPPING: You can dop doublets or triplets for final finishing by coating the backing material with a small amount of stick shellac (available from jewelry supply companies) dissolved in alcohol as faceters do, then heat the wax on the dopstick in a flame. The wax should bond nicely to the shellac without heating the stone, but don't overheat when sanding and polishing!. Another adhesive I sometimes use is 5-minute epoxy. Rig a support (I use a dopping jig for faceting but another method can easily be contrived) to hold the end of the vertical dopstick about 1/16" from the back of the doublet. Put a drop of epoxy on the stone and another on the dopstick, then align them, letting epoxy fill the small gap between. Let dry at least 12 hours. The bond will hold firmly, and when you want to remove the stone from the dop, place the stick horizontally in a vise and use a thin jewelers' saw blade to cut through the epoxy between the stone and stick. The remainder can be sanded off or removed with a scalpel.

The same method can be used for dopping to triplet caps to finish cutting the bottoms (or for nearly any delicate stone that's hard enough to allow the epoxy to be scraped off, or that can survive a soak in acetone which will soften the epoxy bond after 24 hours or so. **DON'T SOAK DOUBLET OR TRIPLET IN ACETONE OR THEY'LL COME APART**). But a short dip (10-15 minutes) to remove stubborn shellac or dop wax shouldn't hurt.

There's one final operation. You need to bevel the backing material 30 or 40 degrees so the stone has a totally finished look from the top and sides. The cap edge should be the widest part of the cabochon. The opal layer should also be beveled slightly under the cap edge but you have to be careful: if you cut it too far an unattractive transparent area surrounds the opal when viewed from the top, ruining the stone's appearance. Just "cut a little and look a lot," as the famous lapidary saying goes. Some people polish the bottoms of their triplets. I usually just grind the bottom to the appropriate thickness (between 1/16" and 1/32") and remove any ugly grinding marks with a 600 wheel. Think about the bottom thickness in terms of the setting the stone will fit into. Thick bottoms won't set well.

There, you're done. If you've chosen your materials carefully and have paid attention to details, you should now have a beautiful jewelry stone that will give pleasure for many years. And the knowledge that all that beauty would have remained hidden forever without your hard work should make your enjoyment even greater.

NOTES:

BASANITE A supplier for basanite rough and slabs is Idaho Opal Mines, Inc., P.O. Box 3848, San Clemente, CA 92674, owned by Bob & Susan Thompson. When in Idaho their phone is (208) 374-5360; in California, (714) 496-4589; FAX (714) 496-6589. The Thompsons offer opal "starts": pre-ground and backed pieces ready for capping; and pre-faced rough for sale. He may also be a source for quartz crystal triplet caps.

BLACK OPAL POTCH: A supplier of plain (non-precious) black opal potch for doublet/triplet-backing and other material of interest is Don Clark at The Gem Garden (<http://www.gemgarden.com> or e-mail at gem@gemgarden.com), phone (916) 221-4686, FAX (916) 221-4740. By mail: 1340 Churn Creek Rd. C-9, Redding, CA 96003.

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Making Opal Doublets and Triplets

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HXTAL epoxy is available from Conservators Emporium, 100 Standing Rock Circle, Reno, NV, telephone 1-702-852-0404, and Talas, 568 Broadway, New York, N.Y. 10012-3225, phone 1-212-219-0770.

"CRYSTAL" CAPS in a variety of calibrated round and oval sizes are available from Alpha Supply, Inc., 1225 Hollis St., Box 2133, Bremerton, WA 98310; phone (360) 373-3302, toll free order line (1-800) ALPHA 11, toll free FAX (1-800) ALPHA 44. Quartz crystal caps may also now be available from Idaho Opal Mines (above). ☼

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What's Happening?

Calendar of Upcoming Events

Dates and Locations of Shows

June 16 thru July 5th, Del Mar Fairgrounds, 2260 Jimmy Durante Blvd., **DEL MAR, CA**

July 3 – 4 10AM-6PM July 5 10AM-5PM CFMS Show, Monterey Fairgrounds, **MONTEREY, CA**

July 10 – July 13 Orcutt Mineral Society, Arroyo Grande High School Parking Lot, Fair Oak Rd., **Aroyo**

July 11 10AM-6PM July 12 10AM-5PM Culver City Rock & Mineral Club, Culver City Veterans Memorial Auditorium, corner of Overland and Culver Blvd., **CULVER CITY, CA**

July 12 10AM-6PM July 13 10AM-5PM Culver City Rock & Mineral Club, Veteran's Memorial Bldg., corner of Culver City Blvd. & Overland Ave., **Culver City, CA**

July 18 9AM-6PM July 19 10AM-4PM Ute Mtn Gem & Min Society, Montezuma County Annex, 103 N. Chestnut, **Cortez, Colorado**

Sept 19 10AM-6PM Sept 20 10AM-5PM Faceter's Guild of Southern California, 2271 W. Crescent Ave., **Anaheim, CA**

Sept 26 – 27 10AM-5PM Vista Gem & Mineral Society, Brengle Terrace Community Recreation Center, 1200 Vale Terrace, **Vista, CA**

Nov 7 10AM-7PM Nov 8 10AM-4PM American Opal Society **OPAL & GEM SHOW**, 616 Convention Way, corner of Katella Ave. and Harbor Blvd., **ANAHEIM, CA**

Jan 22 through Jan 31, 1999 Blythe Rock & Gem Show Colorado River Fairgrounds **BLYTHE, CA**

Now dare to be eccentric
 That so few enter marks the time.
 danger of the time.
 -John Stuart Mill