

The Opal Express

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



**Volume #38 Issue #4
April 2005**

TO:

Some Topics In This Issue:

- John Hall Contribution
- New Opal Deposit in Wyoming
- Australian Opal Country, Pt 2
- Heat Treating Agate
- The Truth about Gem Smuggling

Important Info:

Board Meeting
April 12th

General Meeting
April 14th

Lecture:

David Burton, of Burton's Gems & Opal on: "The Layman's Guide to the Pricing of Opal."

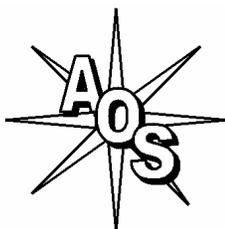
— GENERAL MEETINGS —

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

April 14th Lecture - David Burton on "The Layman's Guide to the Pricing of Opal."



The American Opal Society

<http://OpalSociety.org>

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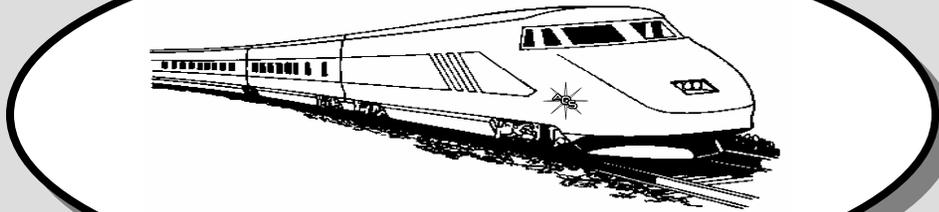
Include my name & address on a list provided to the Dealers selling at our Annual Opal & Gem Show.

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<p>The <u>Opal Express</u> is published monthly by <i>The American Opal Society.</i> Copyright 2005. All rights reserved. Non-Commercial Reprint Permission Granted Unless Otherwise Reserved. Editor-Jim Pisani Please address all inquiries and exchange newsletters to: The Opal Express C/O Jim Pisani P.O. Box 4875 Garden Grove, CA 92842-4875 E-mail: webmaster@opalsociety.org</p>	<p>Are Your Dues Due Now? PLEASE CHECK YOUR ADDRESS LABEL. If your label shows the current month/year your dues are <u>DUE NOW</u>. 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 <u>AUTOMATICALLY</u> dropped from membership thereafter. It is your responsibility to assure your dues are current. Thank you, <i>The Editor</i></p>
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The Opal Express

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Volume 38 Issue 4

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President's Message

By Dr. Walt Johnson

Dear Opal Enthusiasts:

Wow!! Talk about audience participation! Last month's presentation by Eugene LeVan, owner of Australian Opal Imports, was informative and turbulent. He lectured on a computer-based program for evaluating opals. It required a great deal of agreement as to how "bright" the fire appeared in an opal on a scale of 1 to 5. The information was fed into the computer and the value of the stone appeared. Many brought opals to be evaluated. Some were surprised as to the computer findings, others were disappointed. Our newest member, Bill Shaw, recorded the presentation and will soon be available on a CD or DVD for others to share.

This month's speaker is the renowned David Burton, owner of Burton's Gems and Opals in Anaheim. He has 28 years of experience evaluating opals. Those attending the upcoming meeting should bring opals for a completely different approach of evaluating the stones.

Speakers for the future include the director of the GIA courses at Rancho Santiago College, Lothar Vallot, who is also one of the owners of Otten, Vallot & Co. He will bring a wealth of knowledge about opals. Another speaker will be Francis Lau, who in the line of broadening our scope of the curriculum as requested two months ago, will talk about pearl types, values of pearls, and collecting pearls. This is a very restricted area and few people have as great a knowledge about pearls as he does. He will bring types of pearls, beads, and findings for purchase.

We need your help in searching for the best speakers. Think of all the club meetings you have attended and select the most informative speaker you have heard. Let us know how to contact this person. Please send this information of Eugene LeVan, 2201 E. Willow St., Long Beach, CA 90755. Hopefully we will be able to procure this person for an upcoming meeting.

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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.

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Members Only Website Password

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

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To have your Newsletter E-mailed to you...

About a third of the members are receiving their newsletter electronically. Thank you! You are helping offset printing costs of your Society! Getting your newsletter e-mailed is entirely voluntary. We will continue to mail by post as long as members request it.

There are a number of advantages of having an electronic copy of the newsletter. You can save paper by just viewing it electronically. Color photos and pictures can be viewed. A digital copy never wears out and can be printed over and over again. Also, they are much easier to store. A CD could hold dozens of newsletters.

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

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The Opal Discussion Forum

The American Opal Society has an On-Line Opal Discussion Forum. The Forum is a way for people that have questions on opal to post a question or comment to the Society or general public. Members and non-members alike can post a reply.

We encourage member experts to monitor the Forum and participate in a discussion to help those with questions. Also, members will find past postings of great interest, with archives going back to December 2000.

The Opal Discussion Forum can be accessed for the website, or by this address: <http://opalsociety.org/talkshop/index.html>.

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John Hall Makes Contribution to Society

The AOS thanks John Hall of Escondido for his contribution. John gave the society an Index of the Lapidary Journal. The index goes back to the 1940's and will help the editor in finding old articles on opals. In addition, John has contributed dozens of rare issues of Lapidary Journal, Gems and Mineral Magazine, and Rock & Gem Magazine going back to 1962. John Hall is one of longest members of the club and one of the founders of the AOS when it was formed in the 1960's. Thanks for everything, John!

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Geologists Find Opal Deposit in Wyoming **Geologists Find Large Deposit of Opal in Central Wyoming,** **Exciting Rock Collectors**

By BOB MOEN Associated Press Writer

CHEYENNE, Wyo. Mar 1, 2005 — William Ainslie has been collecting rocks and gemstones in Wyoming for a half-century, and news that state geologists have found a deposit of opal in central Wyoming has the 81-year-old rock-shop owner ready to head for the hills.

"I would like to know where it's at," he said in a telephone interview Tuesday. "I'm getting too old to climb steep hills ... but I'd sure try."

On Friday, the Wyoming State Geological Survey will release a report detailing the exact location of a "large opal deposit" found in Fremont County in hopes that it might lead to a successful and lucrative mining operation.

Quality opal can be refined into expensive, colorful, delicate gems that the American Gem Society describes as a "enchanted gem" through which some believe "the mysteries of love can be exchanged."

The opal found in Wyoming is mostly of the "common opal" variety, but there were also traces of the highly valued "precious opal," according to state geologist Wayne Sutherland, who assisted in writing the report.

"The traces of precious opal indicates to us that there is the likelihood of finding more of that," Sutherland said. "...We think there's some real economic possibilities for the deposits."

Because of interest already shown in the find, W. Dan Hausel, state senior economic geologist in charge of metals and precious stones who has led the research into the Wyoming site, decided to schedule a release time for the report so that no one prospective mining company or rock enthusiast gets an advantage, Sutherland said.

Sutherland said the site in a desolate, mountain area southeast of Riverton contains many outcrops of opal within a three-square-mile area. A 34-pound chunk of opal from the site was brought back to the state Geological Survey office in Laramie, where it is on display.

Melissa Connely, a geology instructor at Casper Community College, said opal deposits are found in many areas but are usually small and of poor quality.

The best known deposit of precious opal for gems is in Australia, she said. The best quality opal deposits in the United States are found in Nevada, Idaho and Oregon.

The more color the opal shows what geologists call "play of color," or rainbow effect the more valuable it is, she said.

Sutherland said the Wyoming deposit contains a broad array of colors yellow-orange, transparent blue, semiclear with black spots.

Connely said she would withhold judgment on the Wyoming opal for now, but "I would be interested in taking a look."

Whatever the value of the Wyoming opal, Ainslie, a retired underground uranium miner, said he would gladly make room in his collection case at his home-based Bill's Rock Shop for a piece.

"It's part of being a rock hound," he said.

On the Net: <http://www.wsgs.uwyo.edu/> Wyoming State Geological Survey

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A Field Trip to Australian Opal Country, Part 2

or

An American Opalhollic in Paradise

By Margaret Malm

This is part 2 of 4 of Margaret Malm's travel log while touring the opal fields of Australia with AOS member Barbara McCondra's tour

group. It was written for The Lapidary Digest, a defunct Internet discussion forums, Edited and Published by Hale Sweeny (hale2@mindspring.com). This excerpt is from Issues No. 276-279, 5/21/2000 -1/13/2001. The Editor

Well! Did we make it through the flood to Yowah? You betcha!

In fact, although it was still a question of "Flood Boat"? Or "Flood Truck"?; by the time we got there the flood had receded very rapidly and we were able to drive across! Which was great, as it meant we could take our luggage with us! Our tourist luck again!

Yowah is very different from Lightning Ridge. Much smaller, more intimate. Barbara knows everyone in town! And they were all eager to meet us -- and help us. The town is about 6 blocks long, and 2-3 blocks wide. Their water, like Lightning Ridges, is from an artesian well. But Yowah's yields hot water -- about 135 degrees. This is piped directly to the houses, and so water heaters are really not needed. They usually have a tank that they use to hold water for the "cold" water to cool, before using it. It is slightly sulfur-y, but not too bad.

The mines are right across the road from the highway. Many are open cut, in contrast to Lightning Ridge where open cuts have recently been discouraged. But there are some underground ones, too; we visited one this afternoon. (NOT a tourist mine!) There are fifteen (yes, that's fifteen) shafts leading down into it. Part of the ground has been set aside as a "fossicking" area, where anyone can go and look for Yowah Nuts and gorgeous opal. This is prime territory, in contrast to most places where the fossicking area is a barren (or something slightly salted) tourist area.

A large block of ground is tied up in native claims, which are still under negotiation and thus not being worked just now. Seems that when the land became available for native claim, the natives all rushed out and filed on everything, and there are 4-5 claims for each parcel! Barbara McCondra's mine is called the Boomerang, due to its shape. We have been looking assiduously for opal, and have not had too much luck as far as finding any \$10,000 opals. But we've really gotten to see how things are done in the mines. One day her friend and partner Trafford Hughes brought in his loader and scooped up about 3 loads of materials from the material Barbara is going through, and stuck them into a but "trummel", which is a rotating perforated drum that just tumbles them and separates them from all the surrounding dirt, etc. We got 3-1/2 5-gallons of buckets full of potential "nuts" back, washed them in a small (hand-cranked) washer (like a very small cement mixer) and then cracked them.

Oh! And while we were standing around watching the trummel (on Trafford's claim) I looked down and found a gorgeous opal on the ground at my feet! And he let me keep it! And one day the local fire engine -- complete with sounding siren, came to wet down the heaps to make it easier to spot any opal that was exposed. But we've found a lot of absolutely stunning cabs and rough at prices that would probably floor you back there, as we were buying direct from the miners. We also did some "specking" (looking over the leftovers, as it were) at Gwen Burney's mine. She is a good friend of Barbara's, a lovely homey lady who has helped her with the cooking, too. She also does cutting, and we bought some great stuff from her mine. And then visited the open cut itself and watched her working. It is one of the claims where power equipment is allowed, and she uses a small jack hammer. She let me do some jack hammering (we all got to if we wanted to) and it happened that when I was doing it she got into a good section and brought out 1/2 5-gallon buckets of really nice opalized wood. She invited me to come back and bring her more good luck!

Mining laws vary a great deal from state to state in Australia, and also in how assiduously they are enforced. For instance, in Lightning Ridge, which is in New South Wales, you have to get a license for each piece of mechanical equipment, at \$1000 each. And each piece of equipment has to pass a very stringent

mechanical inspection. Everything has to be absolutely perfect. I can certainly understand that the brakes have to be good, and the tires, etc. But when someone is failed for a small spot of rust, that is really going too far. It appears, on the other hand, that these rules and regulations are not being enforced on the large concerns. Just for the little guy. It has been said that they are trying to drive out the little miners, simply because it is easier for the state to keep the books on the taxes they collect. So they are driving out a lot of the miners, who are going to places, such as Queensland, where they are not so particular about the licensing.

We also had another adventure -- not really having to do with opals, but --- on our way over her from Lightning Ridge we stopped for a few minutes in a small town, and the lady barmaid brought out a baby kangaroo -- a Joey --- that she was raising (temporarily), as its mother had just been killed. We all took turns holding this remarkably cute little guy and having our pictures taken with it. 'Roos are killed by the hundreds by peoples cars; they come out about dusk and go hopping across roads with out looking (like our deer) and get smashed. Often it is a mother carrying a Joey in its pouch. And often that Joey dies a miserable death; starving or being eaten alive by the wild animals that consume the mother 'roo. This one had been rescued by a more thoughtful driver.

Yesterday evening Michael came back from Eulo (the nearest small town) after an error, got out, said "we have a small problem" and opened up the jacket he was carrying to reveal -- another Joey, that he had rescued on his way home, it's mother having been recently hit by somebody and killed. What to do? Ron had some experience along this line, and we called the barmaid in Bolen for feeding advice. In order to keep it warm (they have a little higher body temp than we do) it was bundled up in jackets and flannel shirts, a couple of bottle of warm water added, and I got to cuddle it through the evening. Joy! It is so cute!. I named it "Outback". And it slept with Ron, who the next morning really looked like a new father!. Apparently Outback had tossed and turned, and he had to put on a sweat suit, as Outback kept nuzzling him looking for a nipple. We figure he's about a year old. Fully covered with fur (soooo soft!) and is bit enough to hop about a bit. And ate a little grass from the yard today, I understand. We will take Outback with us when we leave, as far as Bollan, and leave him with the barmaid who has the other one. Regretfully, tomorrow morning we must leave and start heading home. We've had a really fabulous time.

If you are interested in really seeing these opal fields, and trying your hand at it, on a non-touristy adventure, go with Barbara and Ron. They are tops!

Ta for now!

Margaret kadok@redrock.net

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Heat Treating Agate to Improve Appearance

From the LAPIDARY DIGEST

I have seen agate that was heat treated which considerably enhanced its original appearance. Does anyone have any information on the process of heat treating agate? Is all plain agate likely to respond to treatment?

Norm Bulmer norbulmer@idt-world.com

Norm, I have never seen agate which has been heat-treated to improve its appearance, but I do know that flint knappers heat treat agate to improve the flaking action, and this is frequently done in their kitchen ovens. Any good book on flint knapping will give time-temperature data for doing this.

I discussed this a year or so ago with a well-known mineralogist on the list and he proposed several mechanisms by which heating could improve flakability, but we did not discuss heating to improve the material's appearance. If anyone has anything to add to this, on the effects on either appearance or

flakability, please write it up and send it in. Any references will be appreciated.

Hale

Firstly, what a joy it is to get the Digest again! Thanks Hale and all!

Now, on heat treating agate to change its appearance: I have only heated southern "Lake Superior Agate". These are gravel pit agates which began their existence in the far, cold north, and then with the help of glaciers and the proto-Mississippi River made their way down to Arkansas. Per a couple of articles in Rock & Gem they can be found as far south as gravel bars in Louisiana. In any event, by the time they have spent some millennia enjoying the sun, they lose their vibrant reds and oranges. The structures are intact, including some remarkable druzy in open pockets, but the color has faded to almost uniform light tans and browns. Heating them restores much of their original vibrancy; heating them carefully and not too hot does so without making them become flaky. Sadly, I have been unable to restore them to the deep, bright reds which are the most prized by collectors and cutters.

I take a Pyrex baking pan and fill it nearly full with clean, dry quartz sand. I then nest faded Lake Superiors in the sand by gently pushing them down until they almost are touching the glass bottom. This is followed by little mounds of sand to cover the exposed stone surface. Put the pan(s) in a cold oven, and set the temperature at 150 degrees F. Every half hour raise the temperature by 50 degrees until you have reached the maximum non-broiler setting - usually 500 or 550. After half an hour at that temperature turn the oven off, and leave it shut until the contents have returned to room temperature - overnight works fine. Remove the agates from the baking pan, and wipe them clean of sand, and they are ready to go! I have cut them, and tumbled them, and they all have come out just fine. The first time I did it I had some fracturing which I didn't understand. It turned out that those agates were relatively "fresh" having been dug out of a gravel pit only 6 weeks previously, and contained some free water which made its own exit under heat pressure.

Since that first batch I have avoided this potential problem by heating them to 150 for at least 2 hours to drive out the water. A better alternative for those who are in a sunnier place would be to let them heat in a dry sunny window for a few days.

Jim Small Small Wonders jsmall@clarityconnect.com

In a follow-up letter with Jim, in talking about the ref. by Mark (see below), Jim suggested that Lakers have lots of iron in them and they might do better by holding them at top end temperature for a longer time.

Hale

See: <http://www.LICCINI.com/Treating/TreatTips.htm> under "Agate".

I also recommend: "Gemstone Enhancements", by Kurt Nassau ISBN 0 7506 1797 7. And for the real secrets, read books on gemstone treatment dating back to Pliny the Elder. Mark Liccini Mark@LICCINI.com <http://www.LICCINI.com>

While the details are sketchy, I once saw a Japanese TV program that was devoted to one agate carver's work. During this program they showed his heat treating method which I shall try to outline below. The agates he selected appeared to be of the gray material from Brazil (though this was not actually confirmed for the particular piece he was working).

His heat treating equipment was a square sheet-metal lined pit which had a layer of wood (charcoal?) ashes. The agates were placed inside with several inches space between each piece. The spaces were filled with more ashes. A sheet metal lid was placed

on top of the pit, and a charcoal fire built on it. The video showed him fanning the fire so that it got very hot, and my wife said that he kept this fire going for several weeks, and allowed it to cool for at least a week before opening. The results were a very red agate with some white areas from which he carved a very nice, lifelike carp.

For those interested in his carving technique. He first clobbered the piece to rough shape with a small hammer and chisel, stone held between knees on a leather apron. A statement was made that he had to work with the stone. Grinding and polishing were done using loose grit held in one hand while the other applied the stone to a steel mandrill. Apparently he had many different shapes of mandrills. I did not see a diamond saw in use in his shop. I hope that you find this interesting enough to try a little heat treating on your own.

Earl ewenglish@blueridge.net www.blueridge.net/~earl

Hi Norm,

I have a friend who used to heat treat Brazilian agate to enhance the colour. First he would slice the agate into quarter inch slices and these he would place on a layer of sand in a tray, when the tray was full of slices, the agate would be covered with another layer of sand, and so on until the tray was full, the last layer being sand. At this point it was placed in an oven and gradually heated over several hours, the heat being raised about 100°F per hour until he reached the max his oven would go to, I think from memory, about 500° to 600°. At this stage it was left for 4-6 hours and then gradually ramped back down at 100°F per hour until the oven was off.

It was then left in the oven until it all cooled down to ambient temperature; this is important, as taking the agate out too soon will cause it to crack.

Some agate would treat perfectly, changing a poor gray or insipid brown into a beautiful deep red. Other agate which appeared to be the same did not alter at all, and there did not seem to be any way to tell which would, and which would not, change colour.

This is the basic process as explained to me by him, and as he said at the timesome more experimenting could refine it even further for better results. ie. leaving the agate at the maximum temp for longer. Hope this helps some.

Regards.

John johnsgem@dove.net.au

The only agate I know that benefits from heat treating is carnelian. Some of it will turn a dark burgundy red by heating. A natural and inexpensive way of treating it is by placing it in direct sun for a summer.

To do it in an oven, pack the carnelian in an oven proof container surrounded by cat litter or clean sand. Put the container in the oven and bring it up to the temperature of the lowest setting. Leave it 1 hour, then go up 50° F. Leave it there 1 hour, then go up another 50°F. Continue this until 500°F is reached. After 1 hour at 500°F, turn off the oven and allow the container, carnelian and sand to cool to room temperature before opening the oven.

Some carnelian will turn very red but other pieces will not benefit much. I think putting it on the roof in the sun is the best way. It is natural, cheap, and environmentally friendly.

Grant Lapadary@aol.com Chico, CA

<Hale's note: I wrote to Roger Pabian, asking him some questions about heat treating agate. This is his response.>

Hale,

Heat treatment of agates is an area in which I have done very little research or experimentation. I can pass along a few results, however. My own work has shown that not every agate is

amenable to heat treatment. Some stones react with very pleasing results and others do absolutely nothing. I will categorize them below:

1. Honey agates from glacial tills of Nebraska, Iowa and Kansas. Plain light yellow to dark yellow agates with onyx and fortification bands and some without bands. Some would change to shades resembling Lake Superior agates and others were not affected. Best results were obtained by placing the agates in sand and heating them slowly to 550°F and keeping them at that temperature for about 8 hours. Allow them to heat and cool slowly.

2. Colorless to yellow agates from Brazil and Uruguay. The results were the same as above.

3. Colorless to light yellow, translucent agates from Estacion Moctezuma, Chihuahua, Mexico. Absolutely none reacted to heating. They all came out of the fire just as they went in.

Those are the only three examples on which I have some data. The best results were obtained when the agates were heated in the absence of air. This probably resulted in the metallic ions being reduced to more colorful oxidation states. I have not tried such things as charcoal fires. That may be worth a try this summer when I'm grilling.

One time my friend John Boellstorff and I were working with some colorless Brazilian agates and we tried heating the agate in an oxidizing environment. We boosted the temperature too quickly and the agate literally became a pop-agate. Just like popcorn, the agate increased in volume five or six-fold and came popping out of the oven. The pattern did not change but the agate became red and white and was of very low specific gravity. I still have the pieces around someplace and they fit together to form somewhat of a slab.

I think that in the agate bibliography there are a couple of papers that refer to heat treating. When I get this indexed, they will be easier to find.

Sorry I don't have more information for you. Hope the above helps.

Take care,

Roger Roger K. Pabian rpabian1@unl.edu

Heat Treating Agate - a Bibliography

Roger Pabian (above) suggested that there were some papers on this in his Agate Bibliography; I searched it and found the following ones:

Graves, E., 1965. Dyeing and heat treating quartz and other stones. *Gems and Minerals*, no. 339, p. 39 - 43. Artificial coloring.

Kathan, M. L., 1949. Coloring agate. *The Mineralogist*, v. 17, no. 10, p. 501-502. Paint backs

----, 1953. Easy Ways to Color Agate. *Lapidary Journal*, 1953 *Rockhound Buyer's Guide*, p. 72

----, 1977. Easy ways to color agate with heat and chemicals. *Lapidary Journal*, v. 31, no. 4, p. 1048-1049.

Luoma, H. L., 1948. Heat treating Brazilian agate. *The Mineralogist*, v. 16, no. 2, p. 104-106.

MacCulloch, J., 1819. Account of the method of colouring agates. *Edinburgh Philosophical Journal*, v. 1, p. 341-344.

Moore, D. D., 1981. Getting the best color from Brazilian Agate. *Lapidary Journal*, v. 35, no. 3, p. 632. heat treatment

Nassau, K., 1985. Miscellaneous Gemstone Treatments Part II, Gemstone Enhancement. *Lapidary journal*, v. 39, no. 3, p. 30-40. Artificial coloring of agates

Randolph, G. C., 1935b. Does strong sunlight deepen the color of carnelian agate? *The Mineralogist*, v. 3, no. 3, p. 17-18. India, Australia, Brazil.

Sassen, R., 1977. Dyeing and heat-treating agate and other stones. *Gems and Minerals*, no. 477, p. 34-38.

VanAmringe, E. V., 1936. The artificial coloring of agate. *Rocks and Minerals*, v. 11, no. 9, p. 194-195.

I searched on the words: heat, treat and color. There may be others, but I think this is the majority of them. Also, a quick search of Rock & Gem article titles found two which may be of interest; they are:

FEB 1985 Color in the Oven MAR 1999 Iron - The Quintessential Coloring Agent

I have not seen any of the above articles. Hale

From the Lapidary Digest, Edited and Published by Hale Sweeny (hale2@mindspring.com), LapDigest News for Issue No. 283 & 284 - 2/10/2001 to 2/18/2001

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The Truth about Gem Smuggling

By Lisa M. Ruth

An important note about bringing in loose stones (e.g. such as opals from Australia) into the USA from overseas; don't hide it! There's no duty! The Editor

Gem smuggling.

The term evokes pictures of swashbuckling pirates and trench-coated international spies. The reality is far more gritty and physically dangerous on an individual level. Real smugglers, known as "mules," often carry stones from the mine over treacherous terrain by foot, horse, or motor scooter to gem brokers in bordering countries who sell to international buyers. Those international buyers may themselves become smugglers, bringing the gems into their home country illegally.

One of the most confusing questions surrounding international gem smuggling is what it means to smuggle a stone. The answer is not as straightforward as one might think.

From the U.S. perspective, an item smuggled into the United States is one that is not officially declared. That definition may seem obvious, but it's a little-understood facet of the customs process that only gemstones that are not declared on entry are considered smuggled. Even if a gem left its country of origin illegally, it can still be legally imported into the United States through simple declaration of its value.

Imports from some countries are outright prohibited. The United States currently embargoes items from Myanmar (formerly Burma), Cuba, Iran, Iraq, North Korea, and those which specifically benefit terrorists, members of the government of Zimbabwe, and some former Balkan leaders. In terms of colored stones, the only prohibited country of origin is Myanmar, so most smugglers bring gems in illegally for other reasons.

Ironically, one of the biggest reasons is ignorance. The United States has no import duties on loose gemstones, and yet gems are often smuggled by people who believe the duties exist, according to representatives from the customs office in Miami, Florida. In some cases, the importer brought the gems out of the country of origin illegally and wants to avoid scrutiny at the border.

How big is the problem? The U.S. government has no official statistics — or official estimates — on the number or value of colored stones which enter the United States illegally every year. They simply do not exist. The reason, according to a former government employee speaking off the record, is that gem smuggling simply is not a high-profile problem. "You're talking about a total annual market of about \$788 million, and illegal gems don't hurt anyone. How many resources would you allocate to the problem?"

Law enforcement cares about gem smuggling when it is linked to terrorism, money laundering, drug smuggling, or organized crime. Smuggled gems are sometimes discovered in connection to one of these activities, but gem smuggling by itself is a relatively low priority.

The situation is compounded because of the inability to ascertain the origin of stones. Customs agents are incapable of differentiating a Myanmar ruby from a Thai ruby, for example. Because they are not gem experts, they also have very little ability

to estimate the value of a stone, so importers can vastly under-declare the value of an item to avoid the import taxes that are applied to all merchandise.

All this means that, while gem smuggling into the United States undoubtedly takes place daily, the U.S. government lacks both the capability and the political will to stop it, or even track it.

Ring around the Government

Producing countries have a much different view of smuggling. For them, gems bleed from every possible fissure, at every level. They are smuggled out of countries, in some cases, because it is illegal to own or sell them; to avoid export fees; because obtaining a permit to sell them is extraordinarily difficult; or because they are stolen from the mines in the first place. They are smuggled at every level: by individual miners, by mine owners, by members of the military, and by rebel groups.

Estimates on the amount of stones smuggled out of producing countries vary wildly, depending on the source. In 1996, the Colombian government officially valued its emerald exports at \$180 million and said illegal exports — i.e., those for which no taxes or royalties were paid to the Colombian government — were more than 10 times that amount. According to a 2001 report funded by the U.S. Agency for International Development, 45 percent of Tanzania's colored gem production is smuggled out of the country, and legal exports were undervalued by 50 percent. Pakistan estimates illegal gem sales at "more than 100 times" legal gem sales, and it is impossible to make any serious estimate of smuggling out of Myanmar or Afghanistan.

In every case, attempts by the producer-country governments to reduce illegal smuggling through tighter controls actually increase the amount of colored gems illegally exported. The smuggling routes exist because they are cheaper and easier than exporting through legal channels. Once smuggling routes have been established, they are difficult to disrupt — especially in cultures with widespread corruption, where officials are paid to look the other way.

Who, Why, and How?

The only real prerequisites for smuggling to occur are for a country to produce stones and for there to be an external demand for those stones. If there are high import or export duties, tightly controlled ownership, a culture of smuggling, or an enforcement system that is easily avoided or seriously flawed, it's a prime recipe for smuggling.

Illicit gem trafficking often occurs at the individual level, but it also involves large syndicates. According to the Federal Bureau of Investigation, Russian, Chinese, Italian, and African organized crime groups illegally move colored gems across international borders to avoid customs duties or taxes. Russian organized crime, for example, extracts and sells more than 300 metric tons of amber a year — worth more than \$1 billion — according to international law enforcement. India's long and porous coastline allows criminal operations there to smuggle drugs, gemstones, and other prized contraband.

Two of the largest sources of smuggled gems are Myanmar and Afghanistan. Both countries have an entrenched history of smuggling, a culture which supports it, well-established smuggling routes, a wildly corrupt enforcement system, and a large contingent of processors and buyers in bordering countries.

Most Afghans don't think of taking emeralds, rubies, lapis, or other precious stones from Afghan mines, through treacherous mountain terrain, and across the border as "smuggling." It is the way items have moved for centuries, along the same trails, and it is simply the way things are done. Many individual "mules" claim not even to know that what they are doing is illegal, or that there are any alternatives. In a country without an educational system, railway, commercial air service, national mail delivery, power grid, functioning banks, national police, army, civil service, tax collection,

or judiciary, it is difficult to explain that to legally transport gems, one must have a permit from the government.

One professional gem smuggler explained that to get a permit, it would take him at least five days to get to Kabul and up to six months to actually get a document from the government. In the process, he would have to bribe multiple government officials, some of whom probably have little to do with the actual process, and he will eventually receive a piece of paper. He would then return to the mine and would still have to cross the mountains, stave off attacks from warlords, rebels, and criminals, and bribe different government officials. The government document gives him nothing, and costs him both time and money.

Currently, gems are moved from mines in the northern Hindu Kush region to Peshawar, Pakistan. To reach Pakistan, the smuggler will cross mountains of 7,000 to 14,300 feet. There also are likely to be attacks by armed criminals — either affiliated with local warlords or "independents" — which require paying bribes or judiciously avoiding certain areas. Moreover, the Pakistan border is now difficult for Afghans to enter, often requiring additional bribes or stealth to get into Peshawar.

Once in Peshawar, the gems are purchased by brokers or dealers. Most buyers are Asian or European. They take the gems back to centers in Hong Kong, Antwerp, or elsewhere, and the country of origin is rarely mentioned. According to U.S. gem analysts, many Afghani emeralds are purchased by Polish buyers, who sell them as Colombian emeralds. There are even unconfirmed reports of Colombian emerald mine owners paying international purchasers of high-quality Afghani emeralds to classify them as Colombian emeralds.

Ask a Myanmar contraband smuggler about the U.S. embargo against Myanmar goods, and he likely will have no idea what you are talking about. Myanmar goods, including colored stones, are smuggled out of Myanmar to Thailand to avoid ridiculously high government taxes, to skirt government control, and because it is the way goods have moved for literally hundreds of years. The U.S. embargo has almost nothing to do with the Myanmar side of smuggling. Gems are smuggled by individual miners, private companies that partner with the government, army officials, drug dealers, and rebels.

Gem smuggling from Myanmar to Thailand is even more dangerous than from Afghanistan to Pakistan, but it is also one of the only ways many Myanmar citizens have to break out of extreme poverty. The two primary starting points for colored stones are Mogok and Mong Hsu. "Mules" move a few gems at a time by hiding them on themselves. They then take a two-day trip by foot, motor scooter, or horse to deliver the gems to a dealer in a Thai border town. During the trip, the "mule" — usually a woman — will have to cross several official border crossings, where lackadaisical government officials will conduct a cursory inspection. The smuggler pays a bribe to the official and is waved through; whether an individual is carrying contraband or not is irrelevant.

They also likely will face renegade members of the army, armed rebels, security forces of drug lords, mine fields, and wild animals. U.S. officials describe the journey as going through "a completely lawless frontier," where there is every imaginable danger. If a relatively wealthy individual wants to smuggle gems without taking the dangerous trip, he can hire one of the smuggling syndicates to transport the gems. For approximately \$80, a courier will make the trip and meet the buyer in a Thai border town which brokers gem sales.

Once in Thailand, Myanmar smugglers, Thai brokers, and international buyers meet to sell gems. Only known purchasers can do business there; strangers are not included in any serious transactions. Most gems then go to Bangkok, where they are cut, treated, and sold to international purchasers.

Although Myanmar gems are embargoed by the United States, the reality is that it is almost impossible to spot a Myanmar gem or for customs agents to take any action to stem the flow. Even in Thai border areas, Myanmar stones are mingled with gems from Africa, India, Cambodia, Australia, Thailand, and elsewhere. There is no certificate of origin at this stage. Once the stones have moved to Bangkok, they are further mingled. This is where the certificate of origin or authenticity often appears. By that time, only a practiced gemologist can offer an opinion on where the gemstone originated.

In many cases, stones are set in cheap metal settings in Bangkok so they can be brought in to the United States and other countries without attracting any attention from customs officers. Again, the practice springs more from ignorance of the rules than a genuine need to avoid tariffs. As one former customs agent put it, "People are idiots, and they like to think they're doing something sneaky."

The culture surrounding gem mining, government attempts to control it, and individual attempts to avoid government control create a situation which almost assures that as long as gems are mined, some will be smuggled. The deplorable economic conditions of many of the gem-producing countries exacerbate the problem, as do the almost complete inability on the part of customs officers to spot a smuggled stone, limited U.S. government resources, and lack of political will to stop illegal imports. So, chances are that at some point along the line, some of those prized gems in your collection were smuggled.

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April 2005 Gem & Mineral Shows

1-2 — COLVILLE, WA: 5th annual show; Panorama Gem & Mineral Club; Fort Colville Grange Hall, Hwy. 20, 1 mile east of Colville; Fri. 8:30-6, Sat. 9-5; contact Johnie Pitman, 640 Williams Lake Rd., Colville, WA 99114, (509) 684-8882.

2-3 — GRESHAM, OR: Show; Mount Hood Rock Club; Multnomah Kennel Club, 223rd and Glisan; Sat. 10-6, Sun. 10-5; kids' thunder egg hunt Sat., oral auction Sun.; contact Mike Santino, (503) 989-2155; e-mail: mnmsantino@yahoo.com.

2-3 — MEDFORD, OR: 50th show; Roxy Ann Gem & Mineral Society; Medford Armory, 1701 S. Pacific Hwy.; Sat. 9-5:30, Sun. 10-4:30; exhibits, dealers, demonstrations, silent auction, children's activities, door prizes; contact Tricia Caulkins, 926 Hopkins Rd., Central Point, OR 97502, (541) 821-0883; Web site: www.craterrock.com.

2-3 — POCATELLO, ID: 49th annual show; Southeast ID Gem and Mineral Society; Bannock County Fairgrounds; Sat. 10-6, Sun. 10-5; ages 12 and older \$2, under 12 free; door prizes, displays, demonstrators, silent auction; contact Marty Rakatansky, (208) 233-2538, or Robert Murphy; e-mail: rcmurphy@highstream.net.

2-3 — SAN JOSE, CA: 50th anniversary show; Santa Clara Valley Gem and Mineral Society; Santa Clara County Fairgrounds, 344 Tully Rd., between Senter and Monterey; Sat. 10-5, Sun. 10-5; adults \$6, children under 12 free with adult; displays, demonstrations, exhibits, numerous vendors, Touch Table; contact Pat Speece, (408) 266-4327.

2-3 — TORRANCE, CA: 56th annual show, "Nature's Treasures" South Bay Lapidary & Mineral Society; Torrance Recreation Center, 3341 Torrance Blvd.; Sat. 10-5, Sun. 10-5; contact Omer Goeden, (818) 383-9279; e-mail: sageit@aol.com.

9-10 — BELLINGHAM, WA: 44th show; Mount Baker Rock & Gem Club; Bloedel-Donovan Park Community Center, 2214 Electric Ave.; Sat. 10-6, Sun. 10-5; free admission; contact Don Phillips, (360) 714-0054; E Mail: philwrite@att.net

Okolowicz, 37 Le Jardin Ct., Buffalo Grove, IL 60089, (847) 215-7345.

9-10 — HACIENDA HEIGHTS, CA: Annual show; Puente Hills Gem & Mineral Club; Steinmetz County Park Recreation Bldg., 1545 S. Stimson Ave.; Sat. 10-5, Sun. 10-5; free admission; dealers, demonstrators,

displays, kids' activities, raffle, you pick we cut geodes; contact Paula Hess, (562) 696-2270; e-mail: rp Hess@adelphia.net; Web site: www.puentehillsgemandmineralclub.com.

9-10 — MARIPOSA, CA: Annual show; CA State Parks Mining and Mineral Museum, CA State Mining and Mineral Museum Association, Mariposa Gem & Mineral Club; Mariposa County Fairgrounds, Hwy. 49S; Sat. 10-5, Sun. 10-4; gems, minerals, crafts, educational activities, raffles, silent auctions, exhibitors, speakers; contact CA State Parks Mining and Mineral Museum, (209) 742-7625; e-mail: mineralmuseum@sti.net.

9-10 — PARADISE, CA: Annual show & sale; Paradise Gem & Mineral Club; Veteran's Memorial Hall, corner of Skyway and Elliott; Sat. 10-5, Sun. 10-4; free admission; demonstrations, exhibits, silent auction, children's favors, dealers in gems, minerals, fossils, jewelry, beads; contact Anita, (530) 872-1983; e-mail: rae967@cs.com.

15-17 — RICKREALL (SALEM), OR: 50th annual show, "River of Gems" Willamette Agate & Mineral Society; Polk County Fairgrounds, 10 miles west of Salem; Fri. 9-6, Sat. 10-6, Sun. 10-4:30; petrified wood theme; contact Bob Harrison, (503) 364-2288; e-mail: info@wamsi.org; Web site: www.wamsi.org.

15-17 — YAKIMA, WA: Show; Yakima Rock & Mineral Club; Central WA State Fairgrounds, Modern Living Bldg., Fair Ave. and E. Nob Hill Blvd.; Fri. 9-2, Sat. 9-6, Sun. 9-4; school children's day Fri.; contact Marti Sondgeroth, 55 W. WA Ave. #89, Yakima, WA 98903, (509) 248-6401.

16-17 — HELENA, MT: 56th annual show; Helena Mineral Society; Helena Civic Center, corner of Neil Ave. and Park Ave.; Sat. 9-6, Sun. 10-5; adults \$1, children 12 and under free with adult; dealers with gems, minerals, jewelry, fossils, MT agate, equipment, silent auction, door prizes, children's ball toss and garnet hunt, fluorescent MT minerals display, minerals of the world; contact Gary Parisi, (406) 442-1226; e-mail: gjparisi72@yahoo.com.

16-17 — ID FALLS, ID: 38th annual show; ID Gem & Mineral Society; ID Falls Recreation Center, 520 Memorial Dr.; Sat. 10-6, Sun. 10-5; contact Terry R. Hayes, P.O. Box 423, Ririe, ID 83443, (208) 538-5644.

22-24 — GRANTS PASS, OR: 19th annual show; Rogue Gem & Geology Club; Josephine County Fairgrounds; Fri. 9-4, Sat. 10-5, Sun. 10-4; ages over 12 \$1, free admission Fri.; dealers, demonstrators, games, kids' day Fri.; contact Sue Brown, (541) 476-3682; e-mail: rockmominor@charter.net.

23-24 — BAKERSFIELD, CA: 47th annual show; Kern County Mineral Society; Kern County Fairgrounds, Ming Ave. and S. P St.; Sat. 10-5, Sun. 10-5; free admission (parking fee); contact Michelle Sebresos, 308 Woodrow St., Taft, CA 93268, (661) 809-4705.

23-24 — ELMA, WA: Show, "Earth's Treasures" Grays Harbor Geology & Gem Society; Gray's Harbor Fairgrounds, 43 Elma McCleary Rd.; Sat. 10-5, Sun. 10-5; contact Gary Emberley, 624 Fairmont Pl., Aberdeen, WA 98520, (360) 533-6196.

23-24 — KENNEWICK, WA: Annual show; Lakeside Gem & Mineral Club; Benton County Fairgrounds, Bldg. 1, E. 10th Ave.; Sat. 10-5, Sun. 10-4; fluorescent displays, demonstrations, gold panning, jewelry, fossils, minerals, door prizes, silent auction, junior activities, tailgating Sun.; contact Leona George, (509) 783-4262.

23-24 — LANCASTER, CA: 36th annual show; Antelope Valley Gem & Mineral; 2551 W. Ave. H; Sat. 9-5, Sun. 9-5; free admission; contact Jules Ficke, (661) 943-5157; e-mail: av_gem@yahoo.com.

23-24 — SANTA CRUZ, CA: 53rd annual show; Santa Cruz Gem & Mineral Society; Santa Cruz Civic Auditorium, Center St. and Church St.; Sat. 10-5, Sun. 10-5; adults \$3, kids 12 and under free; contact Eleanor or Hubert Drake, (831) 688-8086; e-mail: hmdrake@pacbell.net.

29-1 — ROGERS, AR: 1st show; Northwest AR Gem & Mineral Society; Rogers Expo Center, 2223 Walnut; Fri. 9-6, Sat. 9-6, Sun. 10-5; adults \$4, children 12 and under \$1; gems, minerals, fossils, jewelry, beads, demonstrations, exhibits; contact DeLane Cox, (479) 254-0894; e-mail: delanec3@earthlink.net.

29-1 — YUMA, AZ: 32nd annual show; Colo-Gila Kiwanis Club; Yuma Convention Center, 1440 Desert Hills Dr.; Fri. 10-5, Sat. 10-5, Sun. 10-4; adults \$1, children free; contact Dave Johnson, P.O. Box 647, Yuma, AZ 85366, (928) 782-9043.

30-1 — KINGMAN, AZ: Show, "Gems of Arizona" Mohave County Gemstoners; The Kingman Academy of Learning, 3419 Harrison; Sat. 9-5, Sun. 9-4; free admission; rocks, fossils, crafts, silent auction, exhibits, door prizes, jewelry, demonstrations, dealers; contact Bill, (928) 565-9586, or Dave, (928) 692-3797; e-mail: Tpatt2ts@uneeedspeed.net.

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