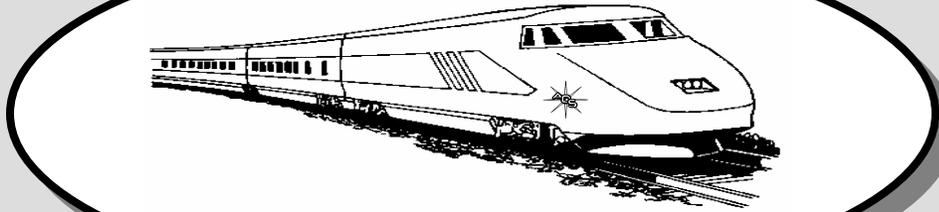


# The Opal Express



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## President's Message

*By Jim Lambert*

I would like to thank Bob Gullage for his presentation at our May meeting. He spoke about precious metals such as Gold, Silver, Platinum and even Palladium. He received an enormous amount of praise, gratitude and appreciation from all members in attendance. We learned how to identify 10K, 14K and 18K Gold; and how to tell the difference between them. He even gave us a bit of knowledge about how to tell the difference between Silver, Platinum and Nickel. We also learned how to put a value on precious metals and where to send them to obtain a top dollar value.

We plan to have an Auction Event at our July meeting. If you have something you would like to sell, bring to our July meeting and we will auction it off for you. Hope to see everybody there.

## Members Only Website Password

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

## Opal Society Workshop

The American Opal Society's workshop is open at Ball Jr. High School every **Thursday** from 7:00 to 9:30 p.m.

The school is located at 1500 W. Ball Road in Anaheim. If you are traveling east on Ball Rd. the parking lot entrance you need to The Opal Express

The American Opal Society

use is just before the railroad tracks Room 37 is in the center of the campus. Please bring a roll of PAPER TOWELS with you for clean-up as the room is a science lab and needs to be kept spotless.

To attend, membership in the American Opal Society is a must due to insurance. A nightly fee of \$2 is asked to help keep the equipment in good running condition.

## July Lecture Summary – Bob Gullage on Precious Metals

Bob Gullage, of Gems & Opals in Anaheim, spoke at our last meeting in July. Bob, a GIA certified gemologist who works at Gems & Opals in Anaheim, gave an excellent talk on what is happening to the jewelry trade with the increase of the cost of precious metals in the recent market. Bob discussed how there's been a run by people bringing in their scrap gold and silver to cash in on the high prices. He warned that you have to consider the karat value of the gold that you are have. Some gold is 12K, which is less than 50% gold.

Bob also warned that people think that they will get the current spot market price of gold but that this just doesn't happen because people need to make a profit.

He said, also beware of refiners. There is no good way to tell if they are on the level on sending back the proper return

Bob also said that recycling old jewelry is a good idea; for example, an old ring with a cheap stone on it, but has a nice design, can have the setting removed and a new setting installed with say , a good opal, can make a spectacular ring.

## Anaheim Arts Council Raffle

The Anaheim Arts Council, which the AOS is a member and active participant, is holding a raffle called the "Opportunity for Arts Fundraiser". The AOS is helping sell the tickets. The tickets cost \$20 a pieced. The AOS needs to sell 50 tickets and gets money back for each ticket.

Grand prizes are \$2000, \$1000, or \$500. In addition, there are many other prizes that will be raffled that have been donated by the member organizations. The probability is fairly good for winning something.

The Drawing is October 2, 2008, at the Anaheim Arts Council Membership Meeting. There will be an Early Brd Drawing on September 4, 2008 for an additional prize PLUS you are still eligible for the BIG prize.

The winner need not be preset. The AOS gets 10% back for all proceeds.

## Third AOS Live Auction on July 10th

The AOS will hold its second "O-Bay," AOS live auction, will on Thursday, July 10 at our general meeting at 7:00. O-Bay will be fun, and "fund-raising," so come and snag a bargain while supporting your club!! There were many great bargains to be had at the event last year!

Don't miss a chance to buy or sell opal rough, cabs, books, tools, display cases, and other neat gem stuff when members may bring up to 5 items each for sale, as long as they are gem-related, and are approved by the AOS Board of Directors. You must be an AOS member to sell at the auction, and you must sign a vendor agreement, printed here for preview. Vendors must donate 10 percent of the final price to the AOS, and will be paid after the refreshment break prior to close of meeting. We will arrive at 6:30 to help vendors prepare their items. If you have items for sale, please come early, and allow us to assign a Lot Number, any minimum "Reserve" price you may request, and log your items into our computer for easy checkout later!

Bidders may be members, or visitors, provided they have a photo ID like a driver's license, and are willing to abide by Bidder rules. You must have an official bid paddle to bid, so sign up early when you first get to the mtg. Copies of the Vendor Rules and Bidder Rules will be made available at the signup table when you arrive.

If you want to bid, you must sign in to get a paddle, and agree to the Bidder rules, which state that all items must be paid for prior to close of meeting, the highest bid wins, all sales are final, no returns or refunds. The AOS auctioneer has final authority to determine the high bid, and can accept or reject any bid at AOS discretion. Bidders cannot bid for another person, and must pay for and remove their auction items prior to the end of the meeting. Bidders are not permitted to loan their paddles to others.

Proceeds from the O-Bay auction will go toward AOS activities like our workshop, and our annual show preparation and advertising. Please be generous with your bids, and get a bargain at the same time!

### Bidder Agreement

#### TERMS AND CONDITIONS

By signing Bidder Agreement Sign-Up form, and accepting bid paddle, bidder agrees to the terms and conditions of the American Opal Society's auction rules and regulations, as described herein, and any laws of the State of California that may pertain. Bidder agrees that auction bid constitutes a legally binding contract and that s/he is obligated legally to pay the total amount of his bid(s) in full to the American Opal Society, henceforth to be known as the AOS, at auction close, in cash or check (with photo ID), prior to taking possession of any auction item(s). Bidder agrees NOT to bid on his own items, nor act in the capacity of a shill or confederate with regard to any other auction vendor, bidder, or item presented. Bidder agrees that s/he is at least 18 years of age, and enters into this agreement willingly, and has read this agreement in full, that he has carefully examined all auction items, and that all items are sold "AS IS, WHERE IS," with no warranty implied or expressed, CAVEAT EMPTOR. Bidder further agrees that by his signature, s/he agrees to indemnify and hold harmless the AOS from any claim resulting from auction or auction item(s). S/he also agrees that any claim at all shall be arbitrated by an ombudsman mutually agreeable to both parties, and who conducts business in the County of Orange, California.

### AOS Live Auction Rules

1. Winning bid is final, and all sales are final, no returns or refunds.
2. High bidder awarded possession of auction item(s) at the sole discretion of the AOS designated auctioneer and the AOS Board of Directors.
3. Winning bidder to take possession of any and all items s/he

- wins immediately after payment in full, and prior to auction close, at his expense, and remove said items from the auction area and the building prior to the end of the scheduled meeting.
4. The AOS reserves the right to accept or reject any or all bids made.
5. Bidder will not transfer or loan or assign his bid paddle and rights to any other party.
6. Auctioneer may, at the discretion of the AOS Board of Directors, bid as any bidder would, and agrees to abide by same terms, conditions, and rules stipulated herein.

## The Women Who Dig For Opal

By Sharon Mascall

### Coober Pedy, Australia

#### Minnie Berrington was among the first.

In 1926, the typist from London made the long journey to Coober Pedy, a remote, South Australian opal mining town halfway between Adelaide and Alice Springs.

"I wish I were a man," she wrote in her memoir *Stones of Fire*. "I'd love to dig for opals."

**"They say diamonds are a girl's best friend, but opal is far more beautiful."**

#### Tania Burke, opal miner

Coober Pedy comes from the Aboriginal term *kupa piti*, meaning "white man in a hole".

Within a few weeks, however, Minnie Berrington was digging alongside the men, pick and shovel in hand, proving that women could go down holes too.

Since the 1920s, hundreds of other women have arrived, hoping to make a living from the precious gem.

Around 95% of the world's opal comes from Australia - and from Coober Pedy in particular. About \$1 m's worth is pulled out of the ground every year.

Over the centuries, the gem has become part of folklore.

It was worn by Cleopatra, called the "Queen of gems" by Shakespeare, and has been credited with curing eye disease and acting as a good luck charm against poison.

#### 'Painted Lady'

Hundreds of new faces arrive in Coober Pedy every year, many of them women.

They hope to find a "Painted Lady" - a rock covered with opal - or a "Virgin Rainbow", the name given to the town's most valuable



You have to watch your step in Coober Pedy

stone, now locked up in an Adelaide bank vault.

"As soon as you see the colour, you hope to make millions tomorrow," said Nikki Penissi, one of Coober Pedy's female opal miners, who migrated to the town from Greece 35 years ago.

"After you lick a few stones you get the fever, opal fever. Make sure you don't lick the stones, because otherwise you're going to be here for 35 years."



Nikki has spent much of her life in Australia underground, either digging for opal or living in a dugout - a cave tunnelled into the side of a hill.

More than 50% of the town's

population - currently 3,500 people - live in dugouts. The air inside is cool and still, away from the dust, flies and desert heat.

When European miners first discovered Coober Pedy's opal fields 90 years ago, some considered it bad luck for women to go down the mines.

But Anne Vanajek, a mother of three who has mined underground for 32 years, says hard work means she has always been treated with respect.

"It wasn't easy in the early days - we'd go out to the field at night with two young children," she said.

"When they went to sleep I'd be sorting out explosives, starting the machinery and trying to sort out the washing and the ironing and all the other things that needed to be done."

"It is hard work physically, not recommended for someone who's frail. I'm lucky that I'm quite a robust person. I've always enjoyed the camaraderie I've had with other miners, they talk to me as an equal."



Nikki Penissi has spent much of her life underground

Today, some of the women of Coober Pedy are turning to other careers - in nursing, teaching or tourism - preferring a reliable income to gambling on opal.

But the women who are still miners say it is a stone they just cannot leave unturned.

"When I first came, I didn't understand what all the fuss was about," said Tanja Burke, a German who met her husband in Coober Pedy when she visited as a tourist, and now mines with him everyday.

"They say diamonds are a girl's best friend, but opal is far more beautiful. I just adore it. It's a magnificent stone."

From <http://news.bbc.co.uk/1/hi/world/asia-pacific/4360990.stm>

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# A Sprinkling of Stardust Lands on UW Astronomer

## Asteroid, particles and, now, mineral bear his name

By Tom Paulson

P-I REPORTER

June 12, 2008

Donald Brownlee, a University of Washington astronomer and pioneer in the study of comets and asteroids, now has a piece of space dust named after him by the International Mineralogical Association.

From now on, the mineral formerly known as manganese silicide -- a combination of manganese and silicon recently discovered within comet dust collected from the stratosphere by NASA's high-altitude U2 airplane -- shall be called "brownleeite."

"I'm now a mineral, an asteroid and a (class of space) particle," chuckled Brownlee, adding that perhaps he will next have a vitamin named after him.

The former chief scientist of NASA's \$212 million Stardust mission, in which a spacecraft in 2006 caught up with a comet called Wild-2 and took samples from its dust stream, has long been known for "Brownlee particles." These are rocky, organic-rich particles (which look like coral under a microscope) the UW scientist and colleagues first identified in 1970 as of interplanetary origin.

The primordial space particles, also sometimes called "micrometeorites," have provided researchers with clues to better understand the formation of comets, asteroids, planets and the early origins of the solar system. It was for this reason that the famed Arizona astronomical couple, Gene and Carolyn Shoemaker, decided in 1991 to also name an asteroid they had discovered after Brownlee.

"It's a big one," said Brownlee, noting this space rock carrying his name surpasses the size of the asteroid believed to have crashed into Earth and caused the so-called KT (Cretaceous-Tertiary) mass extinction event about 65 million years ago. "Fortunately, Asteroid 3259 Brownlee is not on an orbit that crosses our path."

Before this 2003 discovery in the comet dust, brownleeite had not been found in nature. Chemists had created manganese silicide only artificially, for use in the semiconductor industry. Brownleeite is now one of 4,300 official minerals recognized internationally.

It was named for the UW astronomer by a team of NASA scientists at the Johnson Space Center in Houston. The NASA team leader, Keiko Nakamura-Messenger, said they believe the brownleeite dust particle came from a comet called 26P/Grigg-Skjellerup, which crossed the Earth's orbit in April 2003.

"This is great," Brownlee said. "I started collecting these kinds of particles when I was a graduate student here at the UW in the 1960s. ... Now I am one."

P-I reporter Tom Paulson can be reached at 206-448-8318 or [tompaulson@seattlepi.com](mailto:tompaulson@seattlepi.com).

From [http://seattlepi.nwsources.com/local/366896\\_mineral13.html](http://seattlepi.nwsources.com/local/366896_mineral13.html)

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# Gold Rush Fever Returns to the California Hills

By Tom Leonard in Happy Camp, California

5/19/2008

Almost 150 years after the first '49ers swarmed into the mountains of California, a new gold rush is sweeping across the United States.

Soaring gold prices, a recession and ingrained American optimism have combined to prompt thousands to head into the hills.

With the discovery of gold there in 1848, the California Gold Rush brought 300,000 people into the state, transforming what was then a backwater into the embodiment of the American Dream.

Fewer in number, "new 49ers" may have swapped picks and covered wagons for suction dredges and mobile homes but many are just as confident they will strike it rich.

"Too many people think there's gold just lying along the rivers waiting to be picked up," said "Klondike" Mike LaBox, a prospector for 50 years. "There's still vast amounts of gold out there but it's not as easy to get at as it was for the '49ers. Most of it's subterranean."

Mr LaBox, 57, and his wife, Kathy, are caretakers of the Scott River mining camp in the Klamath hills in north California. About 20 prospectors and their families were installed in their mobile homes on the site this week, swapping gold stories and preparing for the onset of the sluicing season, which is timed to avoid disruption to fish spawning.

Mr LaBox said there would be 50 prospectors there before the summer was out. "What upsets me are the ones who are quitting their jobs to come out here with their families, spending thousands of dollars on equipment," said Mr LaBox.

"Almost every day we have people stopping in looking for equipment and they have not a clue what they are buying. I just try to answer their questions. I don't try to discourage them – it's their lesson to be learned."

He added: "Some will get very lucky and even make a few thousand dollars a day, but not for long. But the majority will have trouble even earning enough to pay for fuel for their equipment."

Land claims in the western states have soared and the Gold Prospectors Association of America says its membership has grown by nearly 40 per cent in a few years to 45,000.

"There's a lot of excitement right now," said Walt Eason of the association. "It used to be that you might find \$2,000 or \$3,000 of gold after a week's work. Now it's possible that that figure could be \$15,000 to \$20,000."

Gold has been found in all but two US states – Kentucky and Hawaii. But given that the first rule of prospecting is to look where large amounts have already been found, most of the interest has focused on California, Nevada and Arizona and Alaska.

Improved equipment has enabled prospectors to find gold – currently trading at \$900 (£450) an ounce, that was missed before. Sometimes it is as simple as running over the debris left by earlier miners with a metal detector. Two years ago, one of the Scott River prospectors found a crack in the river bedrock which yielded , more than 23 ounces, worth as much as \$40,000 at today's prices.

Mike Morgan, 54, a former aircraft mechanic, has been prospecting for two years and has never used anything more elaborate than a shovel, pan and sluice box.

For him it is just a hobby, but another camp member had, aged 28, given up his roofing job and moved on to the site with his wife and two small children. He had been there for six months and had little gold to show for it, said Mr Morgan.

"It's hard for him. I wouldn't have put my family through that," he said. "But he's trying to realise his dream and it's difficult to tell him he's wasting his time. The next hole he sinks could be a vein of gold."

Inevitably, prospecting has its dark side. "Gold fever" is a real obsession, said Mr LaBox. "I've seen it. I've had two pounds of my Alaskan gold – worth \$80,000 today – stolen by a man I thought was a friend."

The pan and sluice brigade are not the only ones eyeing up the old gold claims. Commercial mining companies are starting up in Nevada. In Idaho and Colorado. Another, more professional, gold rush is heading towards Mexico as mainly American and Canadian geologists and engineers are leaving their jobs in the big mining companies to get venture capital backing for gold mining in the Sierra Madre mountains.

As for the '49ers' notoriously rowdy off-duty behaviour, tradition is not completely dead, said Mr LaBox. "The drunken fights in the local saloon – that still happens. But there's less gunplay."

From <http://www.telegraph.co.uk/news/1982850/Gold-rush-fever-returns-to-the-California-hills.html>

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## Gem Materials of Mexico and Guatemala

By Allan Taylor

### Opals

Mexico is famous for its [Fire Opal](#), which is a type of opal rarely found in [Australia](#). It is defined as a transparent-to-translucent stone with an orange-to-red body color which may or may not show a play of color. Also found is "Water Opal" which is a colorless (or very pale yellow or faint pink) transparent variety, often showing a play of iridescent colors. Jewelry shops and street stalls in Mexico are well stocked with local opal and not once did I see any Australian material.

Mexican opal is found as nodules and veins in weathered volcanic rocks rich in silica. Because of its natural shape and transparency it is usually fashioned into high-domed cabochons and is often faceted into



Mexican Fire Opals

attractive gemstones of oval and cushion-shape. The high quality stones are very attractive with their pure orange body color showing a delicate play of rainbow colors when viewed at different angles. Lesser quality stones are more translucent and may have whitish agate-like banding whilst others have matrix attached, all of which makes for an interesting variety in appearance.

The center of opal production and lapidary work is the state and city of [Querétaro](#), located 215 kilometers northwest of Mexico City. This Spanish colonial town (population 850,000) has a UNESCO heritage listing for its historic center and is worth visiting to admire the beautiful shops, restaurants and churches. There are many little plazas linked by cobblestone pedestrian malls full of craft stalls.

Opal was first discovered in Queretaro state in 1835, near San Juan del Rio and Tequisquiapan, and the most important mines are San Filipe, Cerro Viejo and La Carbonara. A yellow, and red fire opal are found in a trachytic porphyry in Hidalgo state. Opal occurrences are fairly widespread in the northern volcanic regions of Mexico, and some is found in Guatemala and Honduras. Pre-Columbian relics in anthropology museums show that the Olmecs, Aztecs and Mayans used and traded opal, along with jade and other semiprecious stones.

Climate may be a factor causing opal formation in these volcanic rocks. The Mexican altiplano has an arid climate with any rain confined to the summer months of June to October. Continual wetting and drying out of surface outcrops could mobilize the silica during the weathering process to favor opal formation.

### Jade

Mexican and Guatemalan jade is the variety jadeite, which is a pyroxene of ideal composition NaAlSi<sub>2</sub>O<sub>6</sub>. It was extensively used in Pre-Hispanic times by the Indians for carving into art works e.g. figurines, beads, pendants and mosaic masks, which were owned by priests and royalty. Weapons of war included jade adzes and clubs. The Mayans and Olmecs even used jadeite for tooth inlays. Drilling, sawing and shaping was achieved by abrasion with wood or slate implements loaded with sand, preferably a red garnet sand obtained from the rivers. Very fine examples of ancient jade lapidary work can be seen in the Museums of Anthropology in Mexico City and Jalapa.

When the Spanish arrived in Mexico circa 1520 AD and the Conquistadors took over the country and enslaved the Indians, the sources of this jade were lost, because they were hidden and the

workings became overgrown by the jungle. The Spanish wanted gold and silver and were not impressed by the green stones coveted by the Indians. The Guatemalan occurrences of jade in the Sierra de las Minas mountains were rediscovered in 1975 by the American archaeologist Mary Lou Ridinger who, with her husband Jay, went on and established a mining operation there, and lapidary works, museum and sales outlet ([Jades SA](#)) situated in the beautiful tourist town of [Antigua Guatemala](#) in the Western Highlands.

Another center of jade production today is [San Cristóbal de Las Casas](#) in the southern Mexican state of Chiapas, which borders onto Guatemala. The "Casa del Jade" is an up-market jewelry shop and museum with some lapidary work done on-site. The rough material is obtained from the mountains around Chalchihuitin, some 70 kms north of San Cristóbal.

The jadeite comes in a wide range of colors, translucency and purity (more so than nephrite jade). All types have their special lapidary uses. Colors range from white to black, through brown, orange, pink and many shades of green (apple, grass, emerald etc) and "Galactic Gold" having spangles of pyrite. New colors discovered are lavender, mottled white and blue and light yellow. The most valuable is of emerald green color having high transparency (Imperial Jade). The highly transparent material is of small size and is fashioned into cabochons for fine jewelry.

Jadeite has a granular structure of fine crystals and is often mixed with other minerals such as albite and diopside. Low cost jade pendants (US\$5) available from street stalls in Mexico seem to be a jade rock, having a mottled green and white appearance, the green jadeite being perhaps 75% of the whole.



*Mayan Glyph on Black Jade*

The success of the jade industry in Mexico and Guatemala (insignificant overall) is due to their concentration on up-market sales of fine art work which are bought by wealthy collectors from North America and Europe. They make superb replicas of Aztec and Mayan figurines (labeled, this is a replica of a valuable figurine in a specific Museum of Anthropology) and there is no shortage of Mayan glyphs and other ancient

carvings to copy. The latter may be etched on large slabs of polished black jade and look magnificent. Mosaic jade death masks are popular and make fine ornaments for one's home, but their price was beyond my budget (some over US\$4000).

To some extent this idea has been followed in New Zealand where nephrite jade is used to replicate Maori meres and tikis etc. It makes one realize that having a huge deposit of nephrite jade, such as at Cowell, South Australia, is not much good without the expertise of marketing it in a form desired by affluent collectors.

#### Amber

Amber is a fossilized resin originating from pine trees. It is found as transparent lumps, of yellow to red colour, in Tertiary Age sediments of shallow water origin. The classic deposits are along the Baltic coastline of eastern Europe where for centuries amber has been recovered from glauconitic sands of Oligocene Age (ca 30 million years). It is used for ornamentation, medicinal purposes, in funeral rites and production of varnishes and succinic acid.



*Amber and Sandstone Matrix*

The ancient Mayans of southern Mexico also used and traded amber. The present day mines are near Simojovel and Totolapa in Chiapas state, some 80 kilometers north of San Cristóbal de Las Casas, not far from the jade deposits. It occurs in a grey, micaceous, sandstone of late Oligocene to early Miocene Age (20 to 30 million years) with a capping of lignite. It originates from the resin of the tree "Guapinol" and is found associated with fossil brachiopods, gastropods and molluscs. It is a mountainous area and the workings simply consist of adits dug by miners (los ambareros) into the hillside.

In San Cristóbal one must visit the [Museo del Ambar de Chiapas](#) which is housed in the Ex Convento de la Merced, to see a huge collection of local amber and to learn the history of its exploitation. The Simojovel area is the most productive of clear yellow to pinkish amber, whilst the Totolapa amber is more reddish with frequent inclusions of insects. Some 75 different species of insects have been identified including ants, butterflies, spiders, mosquitoes and other flies to 1 cm size. Colors vary (like sherry and port wine) from clear yellow, cognac, red, cream and black.

Clear yellow amber with insect inclusions is highly prized for pendants and display specimens. Polished amber pieces are set in silver jewelry. The local silversmithing is excellent with the usual range of pendants, bead necklaces, cabochons in rings and earrings. Large pieces, 6 to 10 cm size are carved into figurines, birds, animals, frogs etc. Some expensive necklaces have amber combined with either lapis lazuli or jade. Much of the low cost amber for sale on street stalls is pressed amber, made by heating under pressure small, otherwise useless fragments. Amber melts around 220°C and will aggregate into a single lump, complete with added insect inclusions and many air bubbles. Be suspicious if your amber pendant has an imbedded scorpion or peso coin!

#### **Miscellaneous**

Much fine lapidary work is done with [obsidian](#). At [Teotihuacán](#) archeological site near Mexico City there is an obsidian workshop where for the benefit of tourists the Indians fashion traditional arrow and spear heads for sale. However, some obsidian has a beautiful flow structure which is emphasized when polished into spheres and other ornaments. The varieties known as Sheen Obsidian (yellow sheen) and Rainbow Obsidian (rainbow sheen) are particularly striking.

The silver mining regions that I visited north of Mexico City (Pachuca and Guanajuato to Zacatecas) are a source of many [mineral specimens](#) of interest to the collector. The gangue minerals include quartz crystals often with an amethystine base, calcite as platy rosettes (calcita en hojas) and as spiky "dog tooth spar" and massive fluorite. Silver minerals include native silver, argentite, ruby silver, and the common sulfide minerals chalcocopyrite, pyrite and

galena are plentiful. I was tempted to buy some colorless topaz crystals and rare danburite crystals up to 5 cm size.

By Allan Taylor, from notes taken on a 3 month visit to the region; 7 Nov 2004 to 7 Feb 2005, the article being first written for the monthly newsletter of the "[Field Geology Club of South Australia](#)", Bulletin Vol 34, #2, March 2005, pp 5-7.

Allan Taylor can be reached at [amtargo@bigpond.com](mailto:amtargo@bigpond.com)

From <http://www.bootsnall.com/articles/05-04/gem-materials-of-mexico-and-guatemala-mexico-and-guatemala.html>

### Australian 'Nessie' Fossils Found

Australia was once home to ancient reptiles that swam in huge icy lakes, fossil evidence suggests.

The large, carnivorous reptiles lived 115 million years ago, during the age of the dinosaurs, when much of the continent was covered in water.

Fossils of two new species of plesiosaur were discovered near Coober Pedy in South Australia.

#### PLESIOSAURS

A genus of extinct marine reptiles, having a long neck, a small head, a short tail, and four large paddling limbs

First appeared at the start of the Jurassic Period, and thrived until 65 million years ago

Lake or sea monster sightings are occasionally explained as plesiosaurs but scientific evidence points to them being extinct

Plesiosaurs, famed for their long necks, are said to resemble Scotland's mythical Loch Ness monster.

The Australian specimens are described in recent editions of the journals Biology Letters and Paleontology.

One, known as *Umoonasaurus demoscyllus*, was about 2.4m (7.2 ft) long and had crests on its head, perhaps for display or mating purposes.

"Imagine a compact body with four flippers, a reasonably long neck, small head and short tail, much like a reptilian seal," said the lead author of the two papers, Dr Benjamin Kear of the University of Adelaide.

The other species, *Opallionectes andamookaensis*, grew to about 5 m (16 ft) in length and had small needle-like teeth.

#### Treasure trove

Some 30 fossils were discovered at an opal mine near the outback mining town of Coober Pedy.

They are made up of the mineral opal, which filled the spaces left by bones when the original fossil-bearing rock was dissolved away by acidic ground water.

The fossils include several skeletons and a complete skull of *Umoonasaurus*, and a partial skeleton of *Opallionectes*.

They are thought to be of juvenile animals, suggesting the lake was a breeding and nursery ground.

Scientists believe sea-dwelling adults returned to the shallow inland waters to breed and raise their young.

At the time, Australia was much colder, and the inland ocean would have frozen over in places during the winter.

Scientists believe the creatures might have evolved mechanisms to cope with the harsh climate, such as a faster metabolic rate. They were carnivorous, feeding on fish and squid.

From <http://news.bbc.co.uk/1/hi/sci/tech/5220784.stm>



Reconstruction of *Umoonasaurus demoscyllus* showing an adult with crest (top) and juvenile (bottom).

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### Slab Saw Basics

By Bruce Mensinger

Shop Chairman

Culver City Rock & Mineral Club



Slab saws are typically the first tool to use in opening up a chunk of rock. A slab saw is distinguished by having a vise or other clamping and holding fixture built in.

The chop-saw or tile saw design uses a stationary vise; the circular blade is either lowered into the rock or it is on a trolley that moves horizontally. These saws are best for blade sizes up to ten inch diameter or so and for rock that is easy to cut, such as marble, obsidian, calcite, etc. The main reason for these limitations is that blade heating is controlled with water.

For heavy duty sawing (larger sizes, harder rock), oil cooling is necessary for rapid cutting, long blade life, and straight cutting. For this an enclosed saw is best. Oil can be supplied to the blade and in the saw kerf by filling the saw with oil so that the lower part of the blade rim is covered. As the blade rotates it drags oil into the kerf. A better system for longer blade life, faster cutting and straighter flatter cuts is a pump circulated oiling system. In our shop we use oil cooling exclusively and pump circulation for all saws except for the six inch trim saw.

In enclosed saws, the vise moves on rails to feed the clamped rock into the blade edge. The feed motion can be supplied by hand, by a weight and cable over pulley, by a lead screw, or by hydraulic pump/regulator/ cylinder arrangement. Lead screw feed gives the smoothest cut surface and longest blade life when set up correctly. Both the weight system and the hydraulic feed system can make smooth cuts but because they feed inherently unevenly these are likely to produce wavy cut surfaces. Increasing the weight or the hydraulic pressure to increase cutting speed magnifies any adverse effect of blade run out, asymmetry of blade edge and non-uniformity of diamond grit distribution or occlusion. Hand pushed vise feed produces the widest variation in quality of results but usually tends toward more ripples rather than smooth cut surfaces. All slab saw vises have a way to move closer or farther from the plane of the cut. This allows control of the cut position and thus the thickness of the slab produced.

The revelation of this adjustment is often the real ah-ha moment for beginners who are new to rock saws.

The most difficult part of cutting slabs is clamping the rock in the vise. This is often an awkward feeling, frustrating task. At first, it seems so simple: just stick the rock in the vise, turn the clamp screw until the jaws grip the rock and its ready. But, no. The rock is a potato shape so it isn't secure in the vise, or its irregular so when one jaw has a good place to grip the other has only a slope and no grip. Or, the vise pressure is only on one end of the vise jaws so the

moving jaw binds without producing a secure hold on the rock. Or one of a hundred other clamping problems arises that you need to solve if a successful cut is your goal. Well, we all struggle with this. But, be happy, this is the only routine task in cutting slabs that needs careful, patient thought and ingenuity. Once the rock is securely held in the vise the rest is a repeating cycle: advance the vise so it cuts where you want, close the cover to contain oil spray, turn on the motor, wait for the cut to finish, turn off the motor, open the cover, remove the cut piece, repeat for additional slabs.

From *The Nugget*, 3/08.

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**Beetles Light Up Computer Research**

By [Steve Fidel](#), *Deseret News*, May 26, 2008

Researchers studying ways to use light waves instead of electricity to drive ultra-fast computers have discovered an unlikely development tool: the iridescent green scales on inch-long beetles found in Brazil.



Brazilian Beetle

Microscopic crystals, not pigment, give the Lamprocyphus augustus beetle a brilliant color and sheen. The crystals have a diamond-like structure that gives them "photonic crystal" properties scientists have not been able to create in the laboratory.

The discovery is the focus of a study by University of Utah assistant professor of chemistry and adjunct assistant professor of

physics Michael Bartl and chemistry doctoral student Jeremy Galusha. Co-authors are Brigham Young University student Lauren Richey, BYU biology professor John Gardner and Jennifer Cha, of IBM's Almaden Research Center in San Jose, Calif. The study is scheduled for publication this week in the journal *Physical Review E*.

Galusha was using an electron microscope at BYU where Gardner's group was helping Richey, then a Springville High School student, with a science fair project on iridescence in biology. Galusha first learned of the beetle project there and determined the 3-D structure of the scales using the scanning electron microscope.

Richey's first beetle specimen cost about \$10, plus shipping, from a dealer in Belgium, Bartl said.

"It appears that a simple creature like a beetle provides us with one of the technologically most sought-after structures for the next generation of computing," Bartl said. "Nature has simple ways of making structures and materials that are still unobtainable with our million-dollar instruments and engineering strategies."

Bartl said the sparkling colors of an opal have a similar iridescent effect but a simpler structure that does not aid research in technical applications. Beetle scales are too soft to be used in prototype or production computer parts, and they lack essential semiconductor properties. But the crystals do allow scientists, for the

first time, to work with material that has the ideal structure for a photonic crystal.

"Nature uses very simple strategies to design structures to manipulate light — structures that are beyond the reach of our current abilities," Galusha said.

Bartl and Galusha now are trying to design a synthetic version of the beetle's crystals, using scale material as a mold. Commercial results are years away but very promising. "You would be able to solve certain problems that we are not able to solve now," Bartl said. "For certain problems, an optical computer could do in seconds what regular computers need years for."

According to the U., researchers also are seeking ideal photonic crystals to amplify light to make solar cells more efficient, to capture light that would catalyze chemical reactions and to generate tiny laser beams that would serve as light sources on optical chips.

"Photonic crystals are a new type of optical materials that manipulate light in non-classic ways," Bartl said. Some colors of light can pass through a photonic crystal at various speeds, while other wavelengths are reflected as the crystal acts like a mirror.

Bartl said there are many proposals for how light could be manipulated and controlled in new ways by photonic crystals. "However, we still lack the proper materials that would allow us to create ideal photonic crystals to manipulate visible light. A material like this doesn't exist artificially or synthetically."

E-mail: [sfidel@desnews.com](mailto:sfidel@desnews.com)

From <http://deseretnews.com/article/1.5143.700229111.00.html>

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**Black Opal Declared as NSW's Gemstone Emblem**

7/05/2008

THE rare black opal gemstone found in Lightning Ridge, north of Walgett, was today announced as a NSW emblem.

Member for Barwon, Kevin Humphries, instigated the move a year ago and said the black opal was the rarest and most valuable form of opal, found only in Mexico and Lightning Ridge – with the Lightning Ridge black opal deemed far superior.

The Waratah is the State's floral emblem, the Kookaburra its bird emblem, the Blue Groper its fish emblem, and sky blue is the colour emblem but the gemstone emblem was until yesterday the missing emblem.

"With the Lightning Ridge community so passionate about their mining industry and their Black Opal, the decision seemed only natural," Mr Humphries said.

He said the move to formally recognise the black opal as the NSW gemstone would help promote and preserve Lightning Ridge.

During his speech in parliament today, Mr Humphries described the vibrant, pioneering spirit within Lightning Ridge, where the lifestyle for many had not changed in the past 100 years.

"In effect, the area is a living monument of this pioneering spirit and I'm glad to say it will be rewarded, with the home of the Black Opal now being recognised as the home of the new State emblem," he said.

From <http://theland.farmonline.com.au/>

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**July 2008 Gem & Mineral Shows**

2-6--MADRAS, OR: Show, "Fourth of July Pow Wow"; All American Rock & Gem Pow Wow Club of America; Jefferson County Fairgrounds; ; camping, daily field trips, dig for agate, jasper, thunder eggs, petrified wood for a fee, bring rockhounding tools, kids' rock toss/scramble, Country Kitchen, guest speakers, music, auction, bingo, door prizes, more than 75 vendors, rough rock, finished jewelry, equipment; contact Rocky McCall, 8330 272nd NW, Stanwood, WA 98292, (360) 629-2515; e-mail: [rm711@tgi.net](mailto:rm711@tgi.net)  
 3-6--SISTERS, OR: 12th annual show, "Sisters Round-up of Gems"; Jean Miller; Sisters Elementary School, 611 E. Cascade, off Hwy. 20; Thu. 9-6, Fri. 9-6, Sat. 9-6, Sun. 9-4; free admission; donations benefit OR National Guard Families Emergency Fund; contact Jean Miller, P.O. Box 136, Molalla, OR 97038, (503) 829-2680; email: [shadow92337@netscape.com](mailto:shadow92337@netscape.com); Web site: [www.ogmshows.com](http://www.ogmshows.com)

4-6--PASADENA, CA: Show; International Gem & Jewelry Show Inc.; Pasadena Convention Center, 300 E. Green St.; Fri. 12-6, Sat. 10-6, Sun. 11-5; adults \$7; contact Laurie Reluzco, 120 Derwood Cir., Rockville, MD 20850, (301) 294-1640; e-mail: laurie@intergem.net; Web site: www.InterGem.com

11-13--PORTLAND, OR: Show, "Bead Faire"; Gem Faire Inc.; OR Convention Center/Exhibit Hall E, 777 NE MLK Jr. Blvd.; Fri. 12-7, Sat. 10-6, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

11-13--SAN MATEO, CA: Show; "My favorite! Bead Show"; International Gem & Jewelry Show Inc.; San Mateo County Event Center, 2495 S. DE St.; Fri. 12-6, Sat. 10-6, Sun. 11-5; adults \$7; free beading classes by Wendy Simpson Conner; contact Laurie Reluzco, 120 Derwood Cir., Rockville, MD 20850, (301) 294-1640; e-mail: laurie@intergem.net; Web site: www.InterGem.com

18-20--REEDSPORT, OR: Show, "Lower Umpqua Gem & Lapidary Show"; Lower Umpqua Gem & Lapidary Society; Reedsport Community Bldg., 415 Winchester Ave.; Fri. 10-6, Sat. 10-6, Sun. 10-4; free admission; dealers, demonstrators, silent auction, spin the wheel, door prizes, displays, raffle; contact Bill Hendrickson, 100 Riverbend Rd. #17, Reedsport, OR 97467, (541) 271-6816; e-mail: bamoonman7@msn.com

18-20--BOONE, NC: 14th annual show, "High Country Gem, Mineral & Jewelry Show"; Treasures Of The Earth Gem & Jewelry Shows; National Guard Armory, 274 Hunting Hills Ln., near the hospital, behind the fire station; Fri. 10-6, Sat. 10-6, Sun. 11-5; adults \$3 (good all 3 days), children

under 16 free; jewelry makers, goldsmiths and silversmiths from all over the U.S., gem trees, wire wrap, wire sculpture, pearls, stone beads, stone setting, amber, opal, mineral and fossil dealers, hourly door prizes, classes available; contact Van Wimmer, 5273 Bradshaw Rd., Salem, VA 24153, (540) 384-6047; e-mail: van@toteshows.com; Web site: www.toteshows.com

18-20--KENNER, LA: Show; AKS Gem Shows; Pontchartrain Center, 4545 Williams Blvd.; Fri. 10-6, Sat. 10-6, Sun. 10-4; admission \$5; beading classes, cab demonstrations; contact Kay Schabillon, 4532 Kawanee Ave., Metairie, LA 70006, (504) 455-6101; e-mail: info@aksshow.com; Web site: www.aksshow.com

18-20--SAN RAFAEL, CA: Show, "Gem Faire"; Gem Faire Inc.; Marin Center/Exhibit Hall, 10 Avenue of the Flags; Fri. 12-7, Sat. 10-7, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

25-27--GRESHAM, OR: 2nd annual show, "Gresham Gem, Mineral, Jewelry Show"; Jean Miller; Mount Hood Community College, 26000 S.E. Stark, enter off Kane Rd., parking lot A; Fri. 10-6, Sat. 10-6, Sun. 10-4; ugly jewelry contest, donations requested for OR National Guards families Emergency Fund; contact Jean Miller, P.O. Box 136, Molalla, OR 97038, (503) 829-2680; e-mail: shadow92337@netscape.com; Web site: www.ogmshows.com

25-27--SANTA CLARA, CA: Show, "Gem Faire"; Gem Faire Inc.; Santa Clara Convention Center, 5001 Great America Pkwy.; Fri. 12-7, Sat. 10-7, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

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### **OPAL FROM LIGHTNING RIDGE**

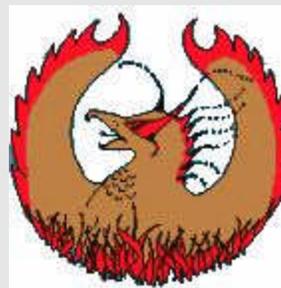
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# American Opal Society Membership Renewal

TYPES OF MEMBERSHIP		DUES / FEES)	AMOUNT PAID
<b>DUES:</b> <b>SELECT ONE</b>	All <u>US</u> Addresses including Alaska and Hawaii	\$30	
	<u>International Members</u> All addresses <u>outside</u> of US Addresses	\$40	
ADDITIONAL BADGES \$10 each (Your First Badge is <u>free</u> when joining)		\$10	
ONE TIME INITIATION FEE All <u>New</u> members		\$10	
SENIOR DISCOUNT Age 65 or over deduct \$5		-\$5	
<b>TOTAL PAID DUES, less Senior Discount plus Badge plus Initiation Fee (if Applicable)</b>			

Please make check or money order payable to "**American Opal Society**". Mail payment and application to:  
**American Opal Society; PO BOX 4875; Garden Grove, CA 92842-4875**  
 An optional, quicker method of payment is via the **Internet**. To pay, just visit the membership page on our website at [http://opalsociety.org/aos\\_application\\_by\\_web.htm](http://opalsociety.org/aos_application_by_web.htm) and complete the form. You July pay with a **Credit Card** or via **PayPal** account. The transaction is completely secure and the AOS never sees your credit card number. The AOS PayPal account is [membership@opalsociety.org](mailto:membership@opalsociety.org).

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

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

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**Are Your Dues Due Now?**  
**PLEASE CHECK YOUR ADDRESS LABEL.** If your label shows the current month/year your dues are DUE NOW. If the date is older, your dues are overdue.  
**A Renewal Grace Period** of two months will be provided. If your dues are due now you will receive two additional issues of the newsletter. Please note, however, that as the system is now set up, if your renewal is not received you will be AUTOMATICALLY dropped from membership thereafter. It is your responsibility to assure your dues are current.  
 Thank you,  
*The Editor*

# The Opal Express

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



**Volume #41 Issue #7  
July 2008**

TO:

## Some Topics In This Issue:

- Anaheim Arts Council Raffle
  - Third AOS Live Auction
  - The Women Who Dig For Opal
  - Stardust Lands on Astronomer
  - Gold Rush Fever Returns to CA
  - Gems of Mexico and Guatemala
  - Australian 'Nessie' Fossils
  - Slab Saw Basics
  - Beetles Light Up
- Black Opal - NSW's Gemstone

## Important Info: Board Meeting – July 1<sup>st</sup>

General Meeting - July 10<sup>th</sup>  
Third AOS Live Auction on July 10th.

- Bring your gems, rough, tools, jewelry, etc. to AUCTION!
- Bring cash for good DEALS!

### — GENERAL MEETINGS —

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

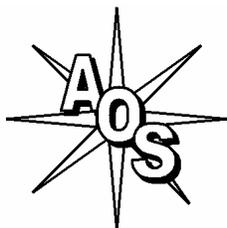
Garden Grove Civic Women's Club  
9501 Chapman Ave.  
Garden Grove, CA 92841

(NE corner of Gilbert & Chapman)

## MEETING ACTIVITIES

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

# Third AOS Live Auction on July 10th



## The American Opal Society

<http://OpalSociety.org>

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