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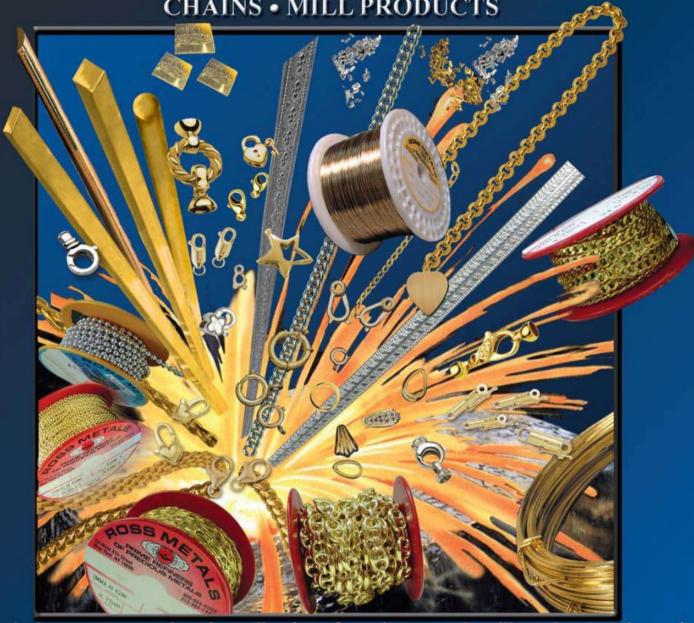




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### ON THE COVER

Crystals of calcite provide the backdrop for purple fluorite cubes in this specimen from Leijei, Yunnan Province, China. The combination measures 7.1 centimeters high.

(Jeff Scovil photo/Joe & Susan Kielbaso specimen)

### **FEATURES**

The Minerals of China.....12 Specimens and information have surfaced in quantity

by Bob Jones

Téa's First Rockhounding Adventure .. 22 Utah rocks and fossils make a memorable time by William A. Kappele

ARTIST PROFILE:

combination

Pippa Small......28 Her jewelry and activism make an attractive

by Jennifer Morkunas

Collecting "Old Classic" Minerals......34 Part II: More collector favorites from around the world

by Bob Jones

Rock & Gem Kids......38 Articles, puzzles and prizes

GIA SPECIAL ARTICLE:

How Green Are We?.....42 A look at where the industry's been and where it's headed on the road to accountability

### FIELD TRIPS

Lucas Creek Carnelian ......46 Collecting orange chalcedony in Washington by Stuart "Tate" Wilson

Zuni Mountains Fluorite......58 Former mines offer excellent opportunities for specimen collecting by Robert Beard

### **REGULAR COLUMNS**

All She Wrote6	Picks & Pans 44
Craftsman of	Contest Rules51
the Month8	Off the Dop52
Show Dates 10	Many Facets56
Shop Talk18	On the Rocks70
Rock Science40	Field Notes 72

28

12





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### **Spring Into Action**

Mid-March signals the shift in seasons that is all too subtle in some parts of the country. This issue anticipates our ability to spring back into the field activities that winter forced us to forego. The rock shows that sustained our collecting habit over the winter will continue into the warmer months, bringing those exotic specimens within reach.

In "The Minerals of China" (page 12) Bob Jones takes a look at the wealth of wonderful specimens that have been coming out of that vast country in recent years and are now abundant on dealers' tables. Information has also been forthcoming from this once-closed nation, which has the makings of a classic source.

Also, in part two of "Collecting 'Old Classic' Minerals" (page 34), our illustrious senior editor continues his explanation of how to enrich your collection with specimens from classic sources around the world—and possibly pick up a bargain in the process.

DBJONES PHOTO

Rediscover the wonder you felt the first time you picked up one of nature's treasures as you follow a new

hobbyist on her first field trip in "Téa's First Rockhounding Adventure", by William A. Kappele (page 22).



In our annual look at the environmental impact of our hobbies, Jennifer Morkunas profiles jewelry artist and human rights activist Pippa Small (page 28), who helps create employment opportunities through jewelry and promote ethical practices in mining. On a broader scale, the Gemological Institute of America (GIA) highlights some of the actions the industry has taken to ease the toll of metal and gem recovery on humans and nature in "How Green Are We?" (page 42).

We mustn't forget the field trips: "Lucas Creek Carnelian" (page 46) tells where you can collect specimens of vibrant, orange chalcedony in the state of Washington, and in the Southwest, closed mines in New Mexico still offer access to

collector specimens ("Zuni Mountains Fluorite", page 58). Dust off your rock pick, dig out your hiking boots, and get ready to spring back into action.



### **Contest Winner!**

The 2009 Lapidary Article of the Year prize was awarded to Dave Fisk for his article "How to Make Solderless Mounts" (October 2009 Rock & Gem). The project was popular among readers for its simplicity and versatility. Dave says, "The Lortone TS8-C Heavy Duty Trim Saw has arrived and is an excellent piece of equipment, and a great asset to my shop, which previously sported a 4-inch tile saw for trimming." Congratulations, Dave!





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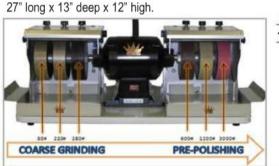
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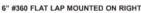
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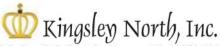
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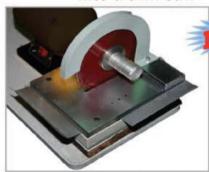
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### RAFTSMAN OF THE MONTH



What do you do with the "worthless" outside cuts when you trim rock?" asks March Craftsman of the Month Glenn Wasson, of San Andreas, California. "Over the years, I have built up a growing slab pile in my backyard, produced from my 18-inch diamond blade. Recently, my wife suggested that I resurface our pa-

tio with concrete pavers, and I wondered if I could convert the growing liability in my work area into a useable asset.

"Our patio is now rejuvenated by a unique and colorful design and has become a conversation piece for visitors. Every square has a story to tell regarding the identity and origin of each specimen and where and how I was able to acquire it.

"After some experimentation, I standardized the following procedure: For a form, use the plastic trays commonly supplied by nurseries for holding six-packs of plants. They are approximately 16 inches square. Trays with small-mesh bottoms are preferred to those with large cutouts.

"Line the trays with any light plastic material that will hold wet concrete. If the plastic bunches up in the corners of the trays, you can cut a slit in the angles to allow the plastic to fit neatly and make a sharp corner.

"You can then select the previously discarded outside rock cuts for color, shape



and pattern, and place the smooth sides down on the plastic in the bot-

tom of the mold. I like to

limit the choice of shards

to one variety for each paver, but you can mix and match your rocks to your taste. The color contrast between the cast-off pieces can be accentuated when placing the pavers

"There is one precaution in placing the smooth-faced pieces on the plastic. During the end of the sawing process, the slab usually breaks off with a small, rough protrusion on the smooth side of the cut. This jagged little extension must be filed or broken off. Otherwise, it will prevent a close contact between the slab and the plastic lining on the bottom of the form, and the cement mix can bleed under the slab.

"For the body of the pavers, I use a plastic-type cement with a four-to-one ratio of sand to cement. Powdered dyes can be added to set off or contrast with the colors of the rock faces. I would highly recommend that you place a piece of wire mesh over the backs of the rock pieces to reinforce the concrete and prevent the blocks from

cracking at some future time. Fine-mesh chicken or rabbit wire works nicely.

"After I systematized my production techniques, I mixed enough concrete to fill four squares at a time. I found that a metal wheelbarrow was just as convenient, if not more so, as a mechanical mixer. The mix must be troweled into each plastic tray and puddled to eliminate air spaces. A thinner mix makes this process easier, but it can bleed under the rock faces if it is too thin. I found that a mix of ordinary thickness gave the best results.

"The pavers can be safely removed from the trays after setting overnight. Just turn the tray upside down, and the paver falls cleanly out of the mold. Pull off the plastic and admire your creative handiwork. Normally, you can remove the plastic without tearing it and reuse it several times.

"I would recommend letting the pavers cure for several days before setting them in place or putting a heavy load on them. The cement continues to harden indefinitely, but achieves most of its strength in the first few days.

"The process of converting an otherwise unusable pile of rock cuttings into an attractive addition to your home requires no special skill or equipment, but can result in a lot of creative satisfaction. Colorful end cuttings that would normally be lost forever in a discard pile can now be viewed every time you use your stepping stones."



### Would you like to be named Craftsman of the Month? To enter the contest:

- Write a 500-word step-by-step description of how you crafted your lapidary project from start to finish. Submit an electronic copy of the story, along with your printed manuscript, if you are able.
- Take least one sharp, close-up, color photo of the finished project. Submit a photographic print or a high-resolution (300 dpi at 4 inches by 5 inches) digital photo as a .tif or .jpg file on a CD. (Contact the editor with questions.)
- · Send your materials, along with your name and street address

(required for delivery), to Craftsman of the Month, Rock & Gem magazine, 290 Maple Ct., Ste. 232, Ventura, CA 93003. Submissions will not be returned, so do not send originals. Only winners will be notified.

Craftsman of the Month winners receive a two-speed Dremel Model 200 N/40 MultiPro kit and a wall plaque in recognition of their creativity and craftsmanship. Winning projects are also posted on our Web site, www.rockngem.com.



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### **MARCH 2010**

5-7—DEL MAR, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Del Mar Fairgrounds/Exhibit Hall, 2260 Jimmy Durante 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

5-7—LARGO, FLORIDA: 40th show and sale; Suncoast Gem & Mineral Society; Minnreg Hall, 6340 126th Ave. N; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$5, students \$4, children free; finished and unfinished gems and minerals, jewelry, beads, equipment, tools, raffle, member displays, grab bags, magazine back issues, lapidary demonstrations; contact Bill Schmidt, P.O. Box 13254, St. Petersburg, FL 33733, (727) 657-0098; e-mail: schmidty@eckerd.edu; Web site: www.sgams.com

5-7—NEWARK, CALIFORNIA: Show and sale; Mineral & Gem Society of Castro Valley; Newark Pavilion, 6430 Thornton Ave.; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$6 (\$1 off flier on Web site), children under 12 free with adult; large, rare ice age fossils, fluorescent rock display, 60 display cases, 35 dealers, eight lapidary demonstrations, benefit auction; contact Larry Ham, P.O. Box 2145, Castro Valley, CA 94546, (510)887-9007; e-mail: showchair@mgscv.org; Web site: www.mgscv.org

5-7—RICHMOND, INDIANA: Show; Eastern Indiana Gem & Geological Society; Wayne Co. Fairgrounds, 861 N. Salisbury Rd.; Fri. 9-6, Sat. 10-6, Sun. 11-4; adults \$4, seniors \$3, students \$1, children 6 and under free; contact John LaMont, 14158 St. Rd. 1, Brookville, IN 47012, (765) 647-4503; e-mail: Midwestchar@peoplepc.com

5-7—SARASOTA, FLORIDA: Show, Frank Cox Productions; Municipal Auditorium, 801 N. Tamiami Trail (Hwy. 41); Fri. 10-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203, Sarasota, FL 34236, (941) 954-0202; e-mail: frank cox@comcast.net; Web site: www.frankcoxproductions.com

5-7—SHARONVILLE, OHIO: Show and sale; GemStreet USA; The Sharonville Convention Center, 11355 Chester Bd.; Fri. 10-6, Sat. 10-6, Sun. 11-5; fine gems, jewelry, beads, fossils, minerals; contact Jane Strieter Smith, (216) 521-4367; Web site: www.gemstreetusa.com

6-7—ARCADIA, CALIFORNIA: Show; Monrovia Rockhounds; LA County Arboretum, 301 S. Baldwin Ave.; Sat. 9-5, Sun. 9-5; adults \$7, students and seniors \$5, children \$2.50; more than 15 vendors, rocks, gems, jewelry, minerals, fossils, wire wrapping, findings, beads, grab bags, Treasure Wheel, Fossil Find; contact Jo Anna Ritchey, 224 Oaks Ave., Monrovia, CA 91016, (626) 359-1624; e-mail: joannaritchey@gmail.com; Web site: www.moroks.com

6-7—BIG SPRING, TEXAS: 41st annual show; Big Spring Prospectors Club; Howard County Fair Barn; Sat. 9-5, Sun. 10-5; dealers, demonstrators; contact Jerald Wilson, 707 Tulane, Big Spring, TX 79720, (432) 263-4662 or (432) 263-3340

6-7—CALDWELL, IDAHO: Show, "Collecting Gems for 2010"; Owyhee Gem & Mineral Society; O'Conner Field House, 2200 Blaine; Sat. 10-6, Sun. 10-5; contact Carolyn Roberts, (208) 466-6191; e-mail: ncrobertsrp@msn.com

6-7—ISSAQUAH, WASHINGTON: Annual show; East KingCo Rock Club; Pickering Barn, 1730 10th Ave. NW; Sat. 10-5, Sun. 10-5; contact Norma Kikkert, c/o EKCRC, P.O. Box 2203, Redmond, WA 98073, (206) 612-3113; e-mail: eastkingco@gmail.com

6-7—KLAMATH FALLS, OREGON: Annual show, "Thundereggs"; Rock & Arrowhead Club; Klamath County Fairgrounds, 3531 S. 6th St.; contacts Garwin Carlson, (541) 882-8276, or Marv Stump, (541) 882-8341 6-7—ROBSTOWN, TEXAS: Show; Gulf Coast Gem & Mineral Society; Richard Borchard Regional Fairgrounds, 1213 Terry Shamsie Blvd.; Sat. 10-6, Sun. 11-5; adults \$5, student group rates, Scouts in uniform and children 12 and under free; demonstrations, exhibits; contact Jerrold Simpson, 1302 Annapolis Dr., Corpus Christi, TX 78415, (361) 851-8788; e-mail: jsimpson1@Stx.rr.com; Web site: www.qcgms.org

6-7—SAN FRANCISCO, CALIFORNIA: Show, "San Francisco Crystal Fair"; Pacific Crystal Guild; Fort Mason Center, 99 Marina Blvd.; Sat. 10-6, Sun. 10-4; admission \$6; contact Jerry Tomlinson, (415) 383-7837; e-mail: sfxtl@ earthlink.net; Web site: www.crystalfair.com

6-7—STANTON, DELAWARE: 47th annual Earth Science Gem & Mineral Show and Annual EFMLS Convention; Delaware Mineralogical Society; Delaware Technical & Community College, I-95 Exit 4B, Churchmans Rd. (Rte. 58); Sat. 10-6, Sun. 11-5; adults \$6, seniors \$5, juniors \$4, children under 12 free with adult; exhibits, displays, dealers, minerals, gems, fossils, gems, jewelry, lapidary supplies, door prizes, lapidary demonstrations, children's booth, grab bags; contact Wayne Urion, (302) 998-0686; e-mail: wuri on@aol.com; Web site: www.delminsociety.net

6-7—VENTURA, CALIFORNIA: 48th annual show, "The Ventura Gem Show"; Ventura Gem & Mineral Society; Seaside Park (Ventura County Fairgrounds), 10 W. Harbor Blvd.; Sat. 10-5, Sun. 10-4; free admission; dealers, displays, gems, minerals, fossils, lapidary art, demonstrations of lapidary arts and jewelry making, door prizes, silent auctions, "Country Store," children's activities; contact Andy Anderson, (805) 987-0043; e-mail: vgms\_editor@roadrun ner.com; or Kathryn Davis; e-mail: kathrynsgems@yahoo.com; Web site: www.vgms.org

11-14—DEMING, NEW MEXICO: 45th annual show, "Rockhound Roundup Gem & Mineral Show"; Deming Gem & Mineral Society; SWNM Fairgrounds, Raymond Reed Blvd.; Thu. 9-5, Fri. 9-5, Sat. 9-5, Sun. 9-5; free admission; more than 100 dealers, demonstrations, displays, field trips, jewelry, rocks, drawings, cash raffle, silent auction Fri., live auction Sat.; contact Jerry & Carolyn Abbey, P.O. Box 1459, Deming, NM 88030, (575) 543-8916; e-mail: theDGMS@gmail.com; Web site: dgms.bravehost.com

12—HOUSTON, TEXAS: Show, "Rings & Things BeadTour"; Rings & Things; Holiday Inn Southwest, 11160 Southwest Fwy.; Fri. 12-4; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, (800) 366-2156; e-mail: drobertson@rings-things.com; Web site: www.rings-things.com/Show/city.php?city=Houston

12-14—BEREA, OHIO: Show and sale; GemStreet USA; The Cuyahoga County Fairgrounds, The Arts & Craft Bldg, 164 Eastland Rd.; Fri. 10-6, Sat. 10-6, Sun. 11-5; fine gems, jewelry, beads, fossils, minerals; contact Jane Strieter Smith, (216) 521-4367; Web site: www.gemstreetusa.com

12-14—COTTONWOOD, ARIZONA: Show, "Verde Valley Gem & Mineral Show"; Mingus Gem & Mineral Club; Verde Valley Fairgrounds, 800 E. Cherry St.; Fri. 9-5, Sat. 9-5, Sun. 10-4; adults \$1 (Fri.) and \$3 (Sat./Sun.), children free with adult; worldwide minerals and gems, fine and costume jewelry, gem and mineral displays, raffles, silent auctions, jewelry, lapidary tools, supplies, equipment, children's activities, free mineral and gem identification; contact Sue Valek, (928) 634-7452

12-14—FT. MYERS, FLORIDA: Show; Frank Cox Productions; Harborside Convention Center, 1375 Monroe St. (downtown); Fri. 1-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203, Sarasota, FL 34236, (941) 954-0202; e-mail: frank cox@comcast.net; Web site: www.frankcoxproductions.com

12-14—HILLSBORO, OREGON: Show, "Back Again in 2010"; Tualatin Valley Gem Club; Washington County Fair

continued on page 20

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# Minerals



These pale yellow twinned calcites from the Shizhuyuan mine in Hunan Province show the rhombohedral form of the mineral.



A plate of dolomite crystals plays host to fine, bright-red cinnabars ranging in size from 1/2 inch to 1 inch.

### Specimens and Information Have Surfaced in Quantity

Story and Photos by Bob Jones

lecting activity after World War II, the only Chinese minerals that were occasionally seen for sale were cinnabars and one or

A phenomenal change came when China opened its borders both politically and commercially in the 1980s. A sudden, marvelous trickle, and then a deluge, of fine specimens hit the mineral market. Initially, there were nice rosettes of azurite, then came red realgars, huge orange orpiments, and superb twinned cinnabars the likes of which collectors had not seen in many decades. Things have slowed some lately to a comfortable flow of a variety of species, but dealers now offer a variety of Chinese minerals at every show.

uring the first several decades of my col- two other insignificant species that had surfaced from museum collections. Only in museums could you see a few nice Chinese minerals, and these had surfaced years ago.

> Among China's current mineral cache are many common minerals in fine specimens, including stibnite, fluorite, calcite, quartz, hematite, aragonite, aquamarine, barite, beryl, arsenopyrite, cassiterite, cinnabar, realgar, orpiment, hemimorphite, azurite, malachite, cuprite, sulfur and garnet.

> After World War II, there was not a single reference book on Chinese minerals, nor did the books that were available describe much from China. Now, we have the excellent English-language text Fine Minerals of China, written by my friend Guanghua (George) Lui in

12 www.rockngem.com Rock & Gem



A fine, twinned calcite perches among slender, needlelike calcites that are faintly colored by iron oxide.



The green pyromorphite from Guanxi, with a typical hopper effect of the crystals, rivals the best from both France and Idaho.

2003. In it, George describes well over 100 species from China. More have been found since then. In addition, all the popular mineral magazines, including *Rock & Gem*, carry articles on the mineral finds in China.

Less common minerals—some of them now considered the finest ever found—have come from China in the last two decades. These include kermesite, bournonite, the new mineral hubeite, mimetite, euclase and scheelite. China has not only produced quantities of superb collector minerals, but is now the type locality for more than 100 species.

Simply listing minerals does little to help you picture the exceptional specimens that are emerging in vast quantities from China. Calcite, for instance, is one of the world's most

common mineral species. For well over a century, superb twinned calcites from the mines of England have been considered the world's best for the species. China has now equaled those English classics with marvelous twinned calcites that are lightly dusted with reddish hematite. These spectacular specimens have been mined at the Leiping Metal mine at Chenzhou in Hunan Province.

Another early arrival from China is choice, crystallized, orange orpiment. The crystals are usually an inch or longer. Some are glassy, but many have an interesting velvety or drusy surface. It can also form wide, rippling, orange sheets with a submetallic luster. The larger sheets are a foot long and 6 inches or wider.

Quartz is such a common mineral that we seldom get excited by water-clear crystals ranging from an inch to about 4 inches long. Yet, the specimens from the Jinlong iron mine (Jinlong Xia, Shanging, Guangdong Province) were so superb that even advanced collectors got excited.



Drusy azurites, mined in great quantities from Anhui Province, China, are often mistaken for those from Bisbee, Arizona.

The quartz from this remote locality is found in nice clusters of water-clear crystals just a few inches long. Perfectly terminated, the crystals diverge in several directions from a common specimen base. What makes these quartzes exceptional are bladed rosettes of black hematite nestled between and sometimes on the quartz crystals.

### Less common minerals—

some of them now considered

the finest ever found—have

come from China in the

last two decades.

The hematite rosettes range from ¼ inch to over 1 inch and are often in tight bundles resembling the botryoidal form. In addition, nature has dusted the quartz with a light film of reddish hematite. Some quartzes are so heavily coated they are blood red! Tucked in among some of the quartz clusters are crystals of the rare mineral helvite that exceed anything previously known.

Two quarries near Tongbei and Yunling in Fujian Province have also produced quantities of quartz, this time the smoky variety! The crystals are 2 inches long or so and some are doubly terminated. What has made these quite ordinary quartzes significant, however, is an associated mineral, bright orange spessartine garnet.

The garnets rarely reach ½ inch or more, with the vast majority under ¼ inch, but they are tightly packed in clusters that often cover the entire specimen.

Of course, what might be considered the signature species from China is cinnabar. Not only does this red mercury sulfide represent one of the earlier mineral species to emerge decades ago, but derivatives of mercury are used extensively in Chinese art and décor.

Southern China has an extensive mercury-rich area that crosses from Guizhau Province into Hunan Province. Many of the mines in this region are rich in cinnabar. One cluster of mines, the Wanshan, Tongsen, Chatian mercury mines, is noted for superb cinnabar collector specimens.

The more attractive of the newly mined cinnabar specimens are single or twinned crystals that measure to an inch on an edge and sit on a white crystal background of dolomite or calcite. Some cinnabar crystals are associated with clear quartz crystals, but the great majority of them are on white carbonates, making a wonderfully attractive



contrast. Cinnabar is light sensitive; when it is exposed to strong light for a period of time, the bright red begins to darken and the crystal develops a metallic sheen.

The other mineral we have come to associate with China is stibnite. Granted, the classic stibnite crystals found in Japan in the early 1900s are the world's best. The Japanese stibnites are up to several feet long, with wide, swordlike blades that are heavily striated and readily identified because of their form and size. A few of the Chinese stibnites re-

Far more common in Chines minesnumbering in the hundreds of thousands of specimens-are needle crystals in small diverging and radiating clusters. Some crystals are hairlike and under an inch long. Others can reach 3 feet in length, but are just over an inch wide. Chinese stibnites are lustrous and lightly striated, and are found in almost countless quantities.

semble the Japanese blades, but they are

uncommon and seldom reach a foot long.

I visited two mineral warehouses in Beijing that were devoted to selling stibnite. Lined with tables, each warehouse held several hundred open flats containing anywhere from four to 10 stibnite clusters of varying sizes. The total count had to be in the tens of thousands.

There are several sources for stibnite in China, but Hubei Province is home of the Wuning Mine, which has produced perhaps

95 percent of the Chinese stibnite we see, more stibnite than any other mine. An amazing, cavelike deposit was breached during mining there. From what I saw in that warehouse, that one source must have produced millions of stibnite crystals.

Fluorite is yet another common mineral that has come from China in abundance and in a variety of crystal forms and colors that is quite impressive. Fine, pale-green cubes to several inches on an edge have been found, and octahedrons an inch or more on an edge that range from colorless to green to purple are common. Most unusual are the spherical crystals of fluorite in great enough quantities to affect the market. These can be blue or green or nearly colorless. The rarest fluorites are the red spheres an inch or more across. The surfaces of these spheres are patterned with crystal edges, giving them a rough appearance.

While the common species have excited everyone, the less common



This twinned cinnabar crystal situated on quartz has been exposed to light so long it is almost black.

ated the most excitement. Each of these species has been found in quantity and in crystals of exceptional size. Some, like fluorapatite and pyromorphite, are very colorful and have been found in quantities and quality that match the better specimens from other countries.

For example, China's scheelite is an exceptional mineral. It ranges in color from a rich honey yellow to orange to orange-red. Crystals can be as much as 4 inches on an edge. They are certainly some of the finest scheelites ever found anywhere. The crystals occur partly embedded in or perched on platy muscovite blades in large clusters. The faces of the tetragonal scheelites show myriad crystal growth lines and ridges. Their luster is greasy to brilliant in most cases, and they occur as individual crystals or in small tight twinned clusters on matrix. The main source of these superb

Yuan Lui (right) is the proud owner of this 3-foot cluster of Chinese calcite species mentioned above have cre- crystals, exceptional examples of a common species.

collector specimens is Xuebaoding Mountain in the far west area of China.

Associated with the scheelite and muscovite specimens are fine crystals of cassiterite, some of the more exceptional crystals ever found. Cassiterite (tin oxide) forms here in dark brown, nearly black, well-formed crystals. The larger Chinese cassiterites reach over 4 inches on an edge, which is quite a remarkable size. They are lustrous, with crystal faces often showing growth patterns that give some

crystals an almost hoppered appearance. Other crystals are nicely striated, while still others are smooth faced.

The mineral kermesite was initially found in the German silver mines and identified in the mid-1800s. It was also found sparingly in a mine in Africa. In both places, the larger of the needlelike, slender crystals reached perhaps an inch in length and formed radiating fans that were colored deep red. Since then, kermesite has remained an attractive, but little known, antimony sulfate, but when China began producing huge sprays of kermesite, every collector got excited. The source is the Calwa antimony mine (Huangtal village, Danfeng County, Shaanxi Province).

These kermesites are almost beyond belief because of the size of the individual crystals and hand-sized radiating sprays. Some crystals are as much as 6 inches long

> and almost all of them occur in diverging sprays that start from a base of under an inch and fan out to measure 4 or 5 inches across the terminations. The sprays are fairly flat and seldom on matrix, perhaps because of the collecting methods employed. The Calwa mine is an antimony deposit, so it also produced some stibnites and a fairly uncommon antimony oxide called senarmontite.

> Hubei Province has been a wonderful source of minerals. It is now well known for producing the new species hubeite, named for the province. Specimens were found at the Daye mine, along with richly colored inseite, azurite, malachite and fluorapophyllite.

Hubeite is chemically complex, containing calcium, manganese, iron, silicon, oxygen, the hydroxyl radical, and water. Its color, a brilliant pink, probably due to the manganese ions, is its most appealing feature. Crystals are just a few millimeters long, but form tight,



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### The Minerals of CHINA from page 14



Needle crystals of stibnite were found in untold quantities in the Wuning antimony mine in China.

radiating clusters and balls in tight bunches several inches across. Sometimes, the color grades into a deep pinkish red. In rare cases, the hubeite infuses into calcite. Most attractive are the twinned calcites richly infused with pink to red hubeite.

The Calwa mine has also produced Japan Law twinned crystals, an exceptionally uncommon form of quartz. The Daye mine has yielded just a few stubby Japan Law twinned amethysts. That is definitely unusual.

One of the uncommon sulfosalt species that occurs in China, sometimes in amazingly large crystals, is bournonite. These are completely unlike the famous cogswheel twinned bournonites from Liskeard, England, which are much treasured for their rarity. In contrast, Chinese bournonites range from thumbnail-size crystals to large, blocky, sharp-edged single crystals 4 inches long. Some crystals show nice striations, while others are quite smooth faced. Smaller crystals were the first to appear from China, but in the last couple of years exceptional crystals, probably the world's finest, have come from that country.

Coming from Arizona, home of some of the finest wulfenites in existence, I find this mineral one of the more attractive species I have collected. During a break in the lectures at an International Symposium in Beijing, a fellow was showing a red specimen to a couple other attendees. I could tell it was a wulfenite from across the lecture hall. The specimen was the first ever found in China and came from a mine on Kuruktug Mountain in Shanshan County, way out in the Xinjiang Uygur Autonomous Region in western China. The miner told me he had mined the specimen from a small pocket lined with similar crystals. This was the first significant find of wulfenite in China.

Of course, I immediately introduced the miner to several Americans who were at the symposium. Among them was Dr. Marcus Origileri, a good friend of my son Evan and me. After the symposium, Marcus headed west to the wulfenite source to see for himself more of these stunning red wulfenites. That trip is described in an article in the January-February 2007 issue of *Mineralogical Record* magazine, titled "China" (page 67).

From the Guichi copper mine in Anhui Province a huge number of azurite specimens were mined. For the most part, the azurites are tiny, bright, druselike crystals that completely coat the sides of openings in boxwork iron oxide. They are typical of azurites from the oxide zones of copper deposits. Such azurite has come from several American mines,

including those at Bisbee, Arizona. In fact, at first glance, the Anhui azurites could be mistaken for, and sold as, those from older American mines.

Wudong, in Guangxi Province, has produced fine crystals of molybdenite, a gray, greasy-looking mineral that forms in platy rosette-type clusters. Some of the platy clusters exceed 3 inches across. The mineral is soft and easily damaged, so sharp, undamaged specimens are the most popular among collectors.

Another recently seen species from China is scorodite, an uncommon iron arsenate. It occurs sparingly in some metal mines as at Hezhou, in the Guanhxi Zhuang Autonomous Region. The scorodites are exceptionally large for the mineral, reaching an inch on an edge. They rival what we have come accept as premier specimens that were once found in Mexico.

What I find exciting about Chinese minerals these days is the continuing discovery of new and different species, often in large quantities. As the value of mineral specimens impacts Chinese mines and collectors, greater efforts to find minerals will be spurred. Many locals have already gone back into old mines with considerable success and this trend, which has developed a cadre of local specimen miners, will certainly bear fruit in the future.

Another exciting factor is the obvious awareness and support of the Chinese government of mineral discoveries and sales. This should encourage the recovery and preservation of minerals as mining continues throughout China.

Because of the vast quantity of minerals already in hand from China and the continued effort of dealers worldwide to go to China and encourage mining and sales, you can find lovely Chinese specimens at every show. The quantity of many of the species described above has been so great that the price range for specimens is quite broad, which is certainly a benefit to rockhounds on a limited budget. So keep an eye out for Chinese mineral species—those that are already well known and available and the new species that are sure to hit the market-place in the future.

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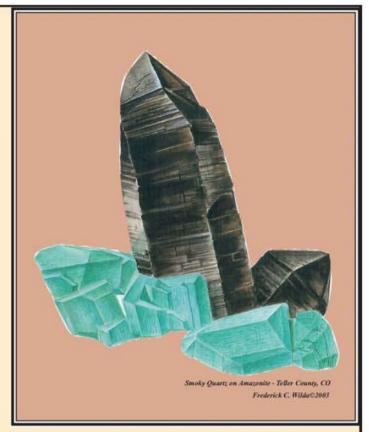
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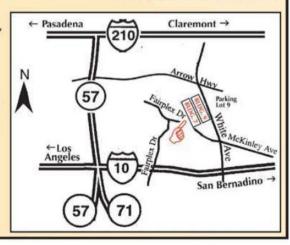
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## HOP TALK

### Using All the Rock

Way back in the early 1900s, Upton Sinclair described in gory detail how the meat packing houses in Chicago used "everything of the pig but the squeal". Well, I promise not to get gory, but I will try to show how the lapidary can use every last bit of the rock and even a good bit of the squeal.

To begin, we have to realize that I wouldn't have to talk about this subject if only Mother Nature had decided to manufacture her rocks as nice cubes with flat faces and 90-degree angles instead of with an infinite number of nooks, crannies, angles, twists and curves. As things are, whenever we haul one of her creations home to convert into lapidary treasures, the first thing we have to do is cut it up into manageable sizes and shapes.

The usual way to begin is to try and find enough flat surfaces so that the rock can be gripped solidly in a standard saw vise. If this works, a number of slabs may be cut before the blade gets too close to the vise. But then what? Remember, we are trying to use all of the rock. Well, the piece left in the vise does have a nice flat side on it now, so another time-tested procedure can be used. The flat face can be fastened to a block of wood with epoxy, polyurethane glue, waterglass, or a number of other adhesives. The block of wood can then be gripped in the vice and, with some careful measuring, can yield slabs right down to the glue line.

Every now and then, though, a rock will show up that just can't be gripped in the vise no matter what. When this happens, there are several options available. There are a number of commercial attachments on the market that will clamp to many irregularly shaped objects and can then be gripped in the saw vise. In many cases, it will be possible to knock small windows off the stone where the vise can get a grip.

This violates our policy of using all of the stone, though, and may even result in knocking off what could have been a nice little cab. A trick that used to be pretty common was to use a mold to encase the rock, or rocks, in plaster of Paris. The mold was usually a milk carton or something like the cardboard tube from a roll of paper tow-



els or toilet paper. While this method holds the rocks just fine, it is nearly impossible to know where to cut to get the piece of the rock that you wanted.

Using all of the rock in the sawing stage is fairly easy, but when it comes to trimming the slab, it gets a little harder. When trimming, there are a lot of small pieces that usually get thrown out, even though many of them would make nice little cabs for rings, cufflinks, and so forth. Trimmings can also be used for small mosaics or for accents in intarsia. Finally, if they are colorful, the trimmings can be broken up into small chips and used to accent a larger mineral specimen in a glass dome. If the base of the dome is wood, white glue is spread over the part that rests inside the dome and the chips are sprinkled on the wet glue. If necessary, several layers can be built up this way. The specimen is then placed on top of the bed of chips, the dome is installed, and the oohs and aahs begin. Some domes will have metal or plastic bases, and in these cases, either an epoxy or a polyurethane glue would be a better choice.

With a little care, measuring and contemplation, you will be able to reduce or eliminate the "squeal."

Please feel free to send your questions and comments about any of my columns to Shop Talk, 25231 Pericia Dr., Mission Viejo, CA 92691 or quappelle@cox.net.





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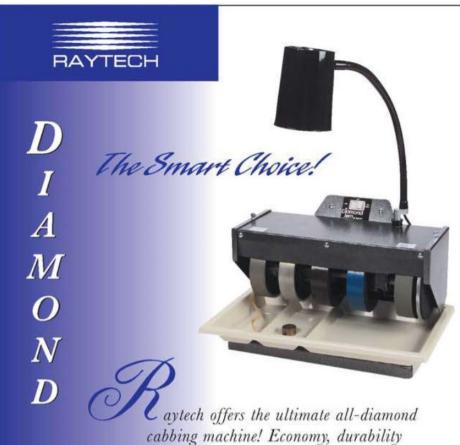
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12-14—PLEASANTON, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Alameda County Fairgrounds, 4501 Pleasanton Ave.; Fri. 12-7, Sat. 10-6, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

12-14—SPOKANE, WASHINGTON: Show, "Earth Treasures"; Rock Rollers Club; Spokane County Fair & Expo Center, N. 604 Havana, at Broadway; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$6, seniors \$5, children 12 and under free; more than 40 dealers, 60 display cases, fossils, gemstones, mineral specimens, handcrafted jewelry, lapidary supplies and demonstrations, hourly door prizes, youth activities, grand prize; contact Leon Agee, (509) 276-3992, or Jim Cotant, (509) 534-1746

12-14—VICTORVILLE, CALIFORNIA: 34th annual tailgate; Victor Valley Gem & Mineral Club; Stoddard Wells Road (graded dirt), 7 miles east of Dales Evans Pkwy.; Fri. 8-5, Sat. 8-5, Sun. 8-5; free admission; vendors, lapidary arts, rough material, gems, jewelry, findings, equipment, dry camping, family field trip Sat.; contact VVGMC, (760) 243-2330, or Brett Ward, (760) 954-4323; e-mail: www.vvgmc.org

13—BATON ROUGE, LOUISIANA: Show, "Rockin' at the Swamp"; The Recreation & Park Commission for the Parish of East Baton Rouge (BREC); Bluebonnet Swamp Nature Center, 10503 N. Oak Hills Pkwy.; Sat. 9-4; adults \$5, seniors (65+) \$4.50, children (2-17) \$4; gem and mineral exhibits, vendors, crafts, rock wall, special presentations, mobile gem mining, treasure hunting trail hikes, children's "Gold Rush", Fossil Quarry; contact Claire Coco, 10503 N. Oak Hills Pkwy., Baton Rouge, LA 70810, (225) 757-8905; e-mail: cocoo@brec.org; Web site: www.brec.org

13—SAN ANTONIO, TEXAS: Show, "Rings & Things BeadTour"; Rings & Things; Aggie Park & Banquet Hall, 6205 West Ave.; Sat. 2-6; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, (800) 366-2156; e-mail: drobertson@rings-things.com; Web site: www.rings-things.com

13—SKOKIE, ILLINOIS: 61st annual silent auction; Chicago Rocks & Minerals Society; St. Peter's United Church of Christ, 8013 Laramie Ave.; Sat. 5:30-10; free admission; silent auction, rocks, minerals, fossils, handmade jewelry, lapidary items, children under 12 must be accompanied by an adult; contact Jeanine N. Mielecki, (773) 774-2054; e-mail: jaynine9@aol.com; Web site: www.chicagorocks.org

13-14—FILER, IDAHO: Annual show; Magic Valley Gem Club; Twin Falls County Fairgrounds, east side of Filer on Hwy. 30; Sat. 9-6, Sun. 9-5; adults \$2, children under 12 free with adult; 50 display cases, 10 dealers; contact Harold Waggoner; (208) 423-9668; e-mail: rmetts@cableone.net; Web site: www.magicvalleygemclub.org

13-14—MACOMB, ILLINOIS: 30th annual show, "Geodes and Sue, Too"; Geodeland Earth Science Clubs; Western Illinois University, Student Union Ballroom, Murray St.; Sat. 10-6, Sun. 10-5; free admission; Chicago Museum's "Sue", dealers, minerals, fossils, jewelry, equipment, silent auction, rock, mineral, fossil and artifact identification, kids' activities, door prizes, programs, lapidary demonstrations, displays, geode cracking; contact Dennis Bomke (217) 546-4096; e-mail: dbomke@comcast.net; or Jim Travis, (309) 645-3609; e-mail: boatnick@aol.com

13-14—MENASHA, WISCONSIN: Show, "Fox Rocks!"; Weis Earth Science Museum; University of Wisconsin-Fox Valley, 1478 Midway Rd.; Sat. 10-5, Sun. 10-4; free admission; demonstrations (gemstone faceting, cabachon making, wire-wrapping), displays, dealers, minerals, fossils, books, jewelry, door prizes, raffle, silent auctions, kids' activities, half-price museum admission; contact Joanne Kluessendorf, Weis Earth Science Museum, 1478 Midway Rd., Menasha, WI 54952, (920) 832-2925; e-mail: joanne.kluessendorf@uwc.edu; Web site: www.weismuseum.org

13-14—SAN MARINO, CALIFORNIA: Show, "Colors of Gems"; Pasadena Lapidary Society; San Marino Masonic Center, 3130 Huntington Dr.; Sat. 10-6, Sun. 10-5; free admission; raffle, sand scoop, demonstrators, vendors, jewelry, gems, rough material, beads, findings, mineral specimens, collectibles; contact Marcia Goetz, (626) 914-5030; e-mail: joenmar1@verizon.net

continued on page 26

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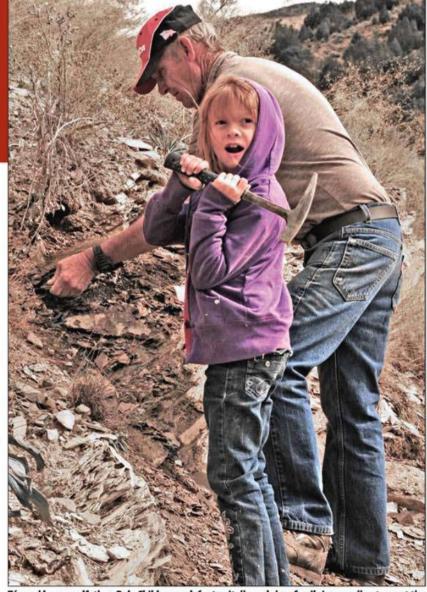
# Téa's 1st Rockhounding Adventure

Story and Photos by William A. Kappele



# Utah Rocks and Fossils Make a Memorable Time

my sister-in-law, Joan Childs, of Provo,
Utah, mentioned that her 8-year-old
granddaughter, Téa, had begun collecting
rocks wherever she went. Joan wondered if
I would take her on a rockhounding trip the
next time I was in Utah. Of course, I never
have to be asked twice about going rockhounding, and I was overdue for a trip to
Utah anyway, so Joan and I started planning
Téa's first real rockhounding adventure.



Téa and her grandfather, Dale Childs, search for turritella and clam fossils in a small outcrop at the Spanish Fork Canyon Fossil site.



This section of wonderstone in the Vernon, Utah, quarry wall looks like it could be hung in a museum of modern art.

Utah can get pretty hot in August, so we decided to schedule it for a time in

September or October. Then began the

fun of dealing with people's vacation

schedules, work schedules, school sched-

ules, etc. We finally settled on a weekend

in early October when everyone involved

It seemed like an eternity of waiting,

but the big day finally came. Saturday

turned out to be a beautiful Utah fall day.

The sun was shining, the air was cool, but

not cold, and we were ready to go. Our

destination for this day was a fossil site

in Spanish Fork Canyon, which is well

known for marine fossils such as clams

and turritellas. Most are small and occur

in plates, but careful searching will turn

Dale, and I piled into my SUV and headed

up the canyon. Since this site is less than an

hour from Provo, and since I had not been

there for a couple of years, Dale and

I had decided to scout it out the day

before. As it turned out, this was a good idea. The turnoff to the fossil

site was at the Tucker Rest Area, but

when we got there, the rest area was

gone and nothing remained but a

big, flat pile of dirt where a highway

widening project was underway. For-

tunately, the rest area was also the

start of two dirt roads to well-used forest areas, so public access was

provided across the construction

zone. The turnoff looked so differ-

ent from what we were expecting,

though, that we sailed right past it

and had to retrace our steps. Once

we found the access and got out of

the construction zone, we found that the fossils were undisturbed and just

Téa, her father Sean, her grandfather

up some whole, loose ones.

would be free.

On the left end of the old rest area site, a road goes to Starvation Creek. Along this road for a mile or so, there are numerous bare spots in the brush where fossils are abundant. This is the direction we took with Téa. Hunting along this road is easier than on Skyline Drive because it runs along a wide valley, with hills containing the fossils on the right. There are also lots of fossils right next to the road. Nothing turns off a youngster on his or her first rockhounding trip than tramping around for hours and not finding anything.

We parked off the road, grabbed our gear, and headed for a big bare spot just a few feet from the parking spot. The fossil plates appeared immediately and did everything but

the famous Skyline Drive. One mile up this road is a small gulch on the right. On the left is a small pullout for parking. Dale and I had checked this spot out the day before and determined that there were indeed many, many fossils there.

Specimens from the Yuba Lake site include a slabbed chunk of bird's-eye rhyolite, loose balls, and a ball that has been cut in half to show the intri-



This piece with lots of nice little turritellas is typical of the material from the Spanish Fork Canyon fossil site.

jump into our hands. It looked as though Téa's adventure would be a success as she bounded up and down the hills picking up fossil plates and "ooohing" and "whoaing" as she went. I confess that, although I contained my urge to "oooh" and "whoa", I still marveled as to just how the remains of these tiny animals, who so many eons ago were living peacefully at the bottom of ancient Lake Uinta, ended up on a mountainside without a drop of water in sight.

After gathering our fill, we packed our specimens away carefully and started back down Spanish Fork Canyon to the junction with Interstate 15. Turning south on I-15, we headed for our next site at Yuba Lake to collect bird's-eye rhyolite. On the way, we stopped at Nephi to refuel and have lunch. Then we continued south on I-15 to exit 202. At the top of the offramp, we turned left toward the lake on old U.S. Highway 95. This road is not marked, but since it was the only one there, we followed it for 1.5 miles

> toward Yuba Lake. We came to a sign marking an off-road vehicle area with a large spot for parking. We turned in, got out our gear once again, and started walking along the road up the hill. It is possible to drive up the hill with four-wheel drive, which we had, but we decided we would see more by walking.

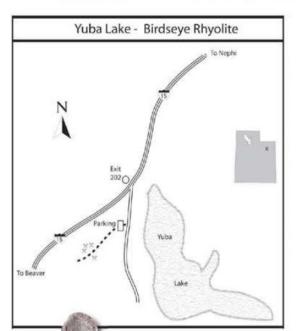
The material we were looking for was a very interesting rhyolite full of little balls. When slabbed, it shows a "bird's-eye" effect. There are also lots of the balls lying loose around on the ground where they have weathered out of the matrix. They range from tiny to a few inches in diameter. Uncut, they look like rounded chunks of rough river rock, but when cut in half they show spirals, circles, and geometric patterns. They aren't jewelry grade, but do make nice specimens of a different kind of rock.

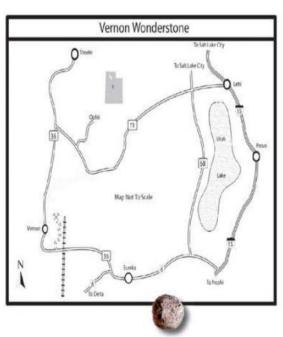
a dirt road goes to the right up to cate pattern inside

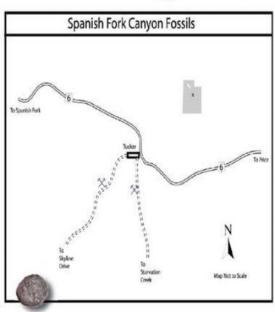
From the site of the old rest area.

waiting for us to show up.

March 2010













As we proceeded up the hill, we began to find more and more pieces. Near the top, we came across some little ledges with lots of balls in matrix. Téa found one chunk sticking out of the bank with a flattened ball about 2½ inches in diameter. It was pretty firmly embedded in the matrix, but with a little help, she was able to use the rock pick to chip away the matrix and eventually pry the ball out. Naturally, she was justifiably proud of getting the ball out all by herself.

After a little more exploring, our time was running out, and it was getting windy and cold, so we started down the hill. About halfway down, I came upon a sight that nearly brought tears to my eyes. Right alongside the road was a smooth boulder filled with balls, many with circles and patterns showing. Unfortunately, it probably weighed more than the four of us combinedwhich is no doubt the reason it was still thereso we left it there and went down the hill and home.

Day one of Téa's first adventure had been a winner, and when I looked out my east-facing motel window on Sunday, I was convinced that day two would be, also. Unfortunately, when I got into the SUV and headed west to pick up the crew, the sky in that direction was as black as the inside of my hat. Well, since this was the only day we had left, we crossed our fingers and started out to our third collecting site, which appeared to be right in the heart of the oncoming storm. Our destination was the old mining town of Ophir, where I had found lots of nice pyrite samples in days gone by. The rain held off, but the wind was blowing hard and it was getting very cold. We poked around for half an hour or so without striking it rich, and although we did find a few little pieces, it appeared that the bigger ones must have crawled down deeper into the tailings where it was warmer. Consequently, we headed off to lunch in Tooele, where we were sure it would be warmer.

After lunch, we headed for the last of the sites I had chosen. This was the wonderstone quarry near the small town of Vernon. The sky looked a little better as we went north, and the rain seemed to be holding off. We followed state Route 36 to Vernon, then drove 4.5 miles to a dirt road, turning left just before a railway crossing. Fortunately, the rain hadn't been here yet, and the road wasn't muddy. The road ran roughly parallel to the railroad tracks for a while, then curved gently to the left. At just about two miles, it dead ended at the quarry.

We walked across piles of rubble, then piles of small to large pieces of wonderstone, until we came to the quarry wall. Some points along the wall were just plain beautiful. When she saw these, Téa's "ooohs" became "OOOHs", and her "whoas" became "WHOAs". I knew just how she felt. Although this wonderstone is mainly a sandstone and is not suitable for polishing, it does makes nice landscape rock, mounted specimens, and rock garden decorations. It also makes 8-year-old girls' and 78-year-old men's eyes light up.

We spent about an hour collecting from the rubble, banging on the quarry wall and just enjoying the thought of such a beautiful sight being out here in the middle of nowhere. Téa also used her newfound skill with the rock pick to coax a few pieces out of the wall. About the time we were ready to call it a day, the rain decided that it had held off long enough and started to fall a bit harder. We got our treasures and our gear back in the SUV just before it began to rain in earnest. At that point, it didn't matter. We had had a great weekend, visited all of the sites I had planned and found some nice material to boot.

I knew that Téa had been looking forward to her first rockhounding adventure for quite a while, so I asked her whether it had been as much fun as she expected. She thought for a few seconds, then said, "Better". That answer made my trip worthwhile. Téa may become a lifelong rockhound, she may become a geologist, or she may become one of a thousand things, but I'll bet she will remember her first big rockhounding adventure.

If any readers would like to visit these sites, please e-mail me at quappelle@cox.net, and I will send you more detailed directions.



This nice chunk of Vernon wonderstone would look great in a rock garden or even on the fireplace mantle.

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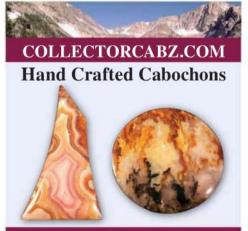
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### Show Dates from page 20

### **MARCH 2010**

13-14-SPRECKELS, CALIFORNIA: Show, "Parade of Gems"; Salinas Valley Rock & Gem Club; Spreckels Veterans Hall, 5th St. and Llano St.; Sat. 10-5, Sun. 10-5; free admission; demonstrations, kids' activities, silent auction, wheel of chance, vendors, award-winning show cases, fluorescent display, free hourly drawings, raffle; contact Ernie DeFever, 31 Nacional St., Salinas, CA 93901, (831) 422-3422; e-mail: minimad64@comcast.net; Web site: www. salinasrockandgem.com

13-14-TURLOCK, CALIFORNIA: Show; Mother Lode Mineral Society; Stanislaus County Fairgrounds, 900 N. Broadway; Sat. 10-6, Sun. 10-5; adults \$5, children 12 and under free with adult; speakers for adults and kids, dinosaur and fossil talks, special fossil exhibits, children's activities, 20 continuous demonstrations, large fluorescent tent; contact Bud and Terry McMillin, P.O. Box 1263, Modesto, CA 95353, (209) 524-3494; e-mail: terry.mcmillin@yahoo.com; Web site: www.turlockgemshow.com

14-AUSTIN, TEXAS: Show, "Rings & Things BeadTour"; Rings & Things; Crowne Plaza Hotel - Austin, 6121 I-35 N.; Sun. 1-5; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, (800) 366-2156; e-mail: drobertson@rings-things.com; Web site: http://www.rings-things.com

16-DALLAS, TEXAS: Show, "Rings & Things BeadTour"; Rings & Things; Best Western Dallas Hotel and Conference Center, 8051 LBJ Fwy.; Tue. 12-4; free admission; gem-stones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210. (800) 366-2156; e-mail: drobertson@ringsthings.com; Web site: www.rings-things.com

17-OKLAHOMA CITY, OKLAHOMA: Show, "Rings & Things BeadTour"; Rings & Things; Biltmore Hotel, 401 S. Meridian Ave.; Wed. 2-6; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450; Spokane, WA 99210, (800) 366-2156; e-mail: drobertson@rings-things.com; Web site: www.rings-things.com

18-21-SAN BERNARDINO, CALIFORNIA: Tailgate show; Orange Belt Mineralogical Society; Western Regional Little League Ball Park, 6707 Little League Dr.; Thu. 2-8, Fri. 8-8, Sat. 8-8, Sun. 9-7; free admission; silent auction, bulk rough, raffle, dealers, lapidary-related items, jewelry; contact Shane Ripley, 31975 Yucaipa Blvd. #1, Yucaipa, CA 92399, (909) 557-3605; e-mail: OBMS\_PR@yahoo.com; Web site: www.meetup.com/Jewlery-Making-for-Fun-and-Profit/

19-21-HICKORY, NORTH CAROLINA: 40th Unifour Gem, Mineral, Bead, Fossil & Jewelry Show; Catawba Valley Gem & Mineral Club; Hickory Metro Convention Center, 1960 13th Ave. Dr. SE, I-40, Exit 125; Fri. 9-6, Sat. 9-6, Sun. 10-5; adults \$4, seniors \$4, students and children free; contact Baxter Leonard, 2510 Rolling Ridge Dr., Hickory, NC, 28602, (828) 294-6924; e-mail: gailandbaxter@aol.com

19-21-HILLSBORO, OREGON: Show, "Gem Faire": Gem Faire Inc.; Washington County Fairgrounds, 873 NE 34th Ave.; 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

19-21-JACKSON, MICHIGAN: Show, "Treasures & Gems in 2010"; Gem & Minerial Society of Jackson; Jackson County Fairgrounds "Fair Event Center", 200 W. Ganson St.; Fri. 10-7, Sat. 10-7, Sun. 10-5; adults \$3, seniors \$2, students 50 cents, children and uniformed military and Scouts free: more than 20 dealers and demonstrators, gems, minerals, fossils, beads, bead making, jewelry, silent auctions, lapidary tools and supplies; contact James Bretes, 3022 Francis St., Jackson, MI 49203, (877) 872-8471; e-mail: info@mgms rockclub.com; Web site: www.mgmsrockclub.com

19-21—ROME, GEORGIA: Show, "Valley and Ridge Gem & Mineral Show"; Rome Georgia Mineral Society; The Forum, 2 Government Plaza; Fri. 10-6, Sat. 10-6, Sun. 11-5; free admission; minerals, gems, fossils, jewelry, crystals, demonstrations, exhibits, lectures, door prizes; contact Tim Biggart, (706) 232-7143; e-mail: tbiggart@ berry.edu; Web site: http://rogams.wordpress.com/gemand-mineral-show/

19-21-SPANISH FORK, UTAH: Show, "Spring Prade of Gems Invitational"; Timpanogos Gem & Mineral Society; Spanish Fork Tennis Court, 475 S. Main St.; Fri. 10-7, Sat. 10-7, Sun. 10-5; free admission; Mr. Bones walking dinosaur, handmade jewelry, gems, minerals, fossils, lapidary supplies, demonstrations, educational displays, silent auction, rough rock; contact Larry Hataway, P.O. Box 103, Spanish Fork, UT 84660, (801) 798-2758; e-mail: larry@ spanishtrailssilver.com: Web site: spanishtrailssilver.com

20-21-BAKERSFIELD, CALIFORNIA: 9th annual show, "Rock and Gem Rendezvous"; Sat. 9-5, Sun. 9-5; Kern County Shrine Club, 700 S. P St., corner of S. P and Bell Terrace; indoor/outdoor show, rocks, fossils, beads, new and used lapidary supplies, jewelry, rough material, finished gems, hourly drawing, silent auction, Spinning Wheel, demonstrations; contact Lewis M. Helfrich or Lynne G. Helfrich, (661) 323-2663; e-mail: lewsrocks@netzero.net

20-21-CEDAR RAPIDS, IOWA: Show; Cedar Valley Rock & Mineral Society; Teamsters Union Hall, 5000 J St. SW; Sat. 8:30-6, Sun. 9:30-5; adults \$2, students \$1, children free: 33-inch Duckbill skeleton compliments of Michael and Barbara Sincak; contact Thomas Whitlatch, 1147 Staub Ct. NE, Cedar Rapids, IA 52402, (319) 551-3870; e-mail: whitlatcht@mchsi.com; Web site: www. cedarvalleyrockclub.org

20-21—ESCONDIDO, CALIFORNIA: Annual show: Palomar Gem & Mineral Club; Army National Guard Armory, 304 Park Ave.; Sat. 10-5, Sun. 10-4; adults \$2, seniors (over 65) \$1, children under 12 free with adult; dealers, rough rock, finished stones, jewelry, tools, gem identification; contact Van Lynch, (760) 749-4164; e-mail: michelleandvan@

20-21-LIVE OAK, TEXAS: Show, "Fiesta of Gems": Southwest Gem and Mineral Society; Live Oak Civic Center, 8101 Pat Booker Rd.; Sat. 10-6, Sun. 10-4; adults \$5, students and seniors \$3, children 50 cents, military discount, special school group rate; minerals, gemstones, fossils, lapidary, demonstrations, exhibits; contact Robert Bowie, (830) 935-3373; e-mail: krbotx@gvtc.com; Web site: swaemandmineral.org

20-21-SEATTLE, WASHINGTON: Show; North Seattle Lapidary & Mineral Club; Lake City Community Center, 12531 28th Ave. NE; Sat. 10-5, Sun. 10-5; free admission; junior activities, demonstrations, club member displays, grab bags, Rockosaurus rides, Rockhound Dinner, dealers, door prizes; contact Susan Gardner, 15428 62nd Ave. NE. Kenmore, WA 98028, (425) 483-2295; e-mail: sgardner3@ mindspring.com; Web site: www.NorthSeattleRockClub.org

20-21-TAMPA, FLORIDA: Show, "Fossil Fest 2010"; Tampa Bay Fossil Club; Florida State Fairgrounds, US 301 and I-4; Sat. 9-6, Sun. 10-4; fossils, artifacts, gems, minerals, shells, exhibits, "how to" seminars, kids' games, fossil mine, raffles, door prizes, silent auction; contact Barbara Fite, (813) 977-0892; e-mail: bfite@tampabay.rr.com; Web site: www.tampabayfossilclub.com

20-21—VALLEJO, CALIFORNIA: Show and sale, "Spring Bling"; Vallejo Gem & Mineral Society; Vallejo Elks Lodge, 2850 Redwood Pkwy.; Sat. 10-5, Sun. 10-5; adults \$3, student \$2, children free; rocks, gems, jewelry, door prizes, silent auction, "wheel of fortune"; contact Phylis Malacki, 370 W. M St., Benicia, CA 94510, (707) 745-3255; e-mail: vgms01@yahoo.com; Web site: www.iwired.org

20-21—WEST PALM BEACH, FLORIDA: Show; Frank Cox Productions; South Florida Fairgrounds, 9067 Southern Blvd. (Hwy. 92); Fri. 10-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203, Sarasota, FL 34236, (941) 954-0202; e-mail: frankcox@comcast.net; Web site: www.frankcoxproduc

24-DENVER, COLORADO: Show, "Rings & Things BeadTour"; Rings & Things; Holiday Inn Denver Cherry Creek, 455 S. Colorado Blvd.; Wed. 12-4; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, (800) 366-2156 or (303) 388-5561; e-mail: drobertson@rings-things.com; Web site: www.ringsthings.com/Show/city.php?city=Denver

26-27-COLVILLE, WASHINGTON: 10th annual show; Panorama Gem & Mineral Club: Fort Colville Grange Hall. 157 Hwy. 20 E.; Fri. 8:30-6, Sat. 9-5; contact Bill Allen, (509) 935-8779; e-mail: Sago@theofficenet.com

26-27-WEST SPRINGFIELD, MASSACHUSETTS: Business-to-business gem trade show; Gem & Lapidary Wholesalers Inc.; Eastern States Exposition, Young Bldg., 1305 Memorial Ave.; Fri. 10-6, Sat. 10-3; contact G&LW, P.O. Box 98, Flora, MS 39071-0098, (601) 879-8832; e-mail: info@glwshows.com; Web site: glwshows.com

26-28-ADA, OKLAHOMA: Show, "The Rock in Gem, Mineral & Fossil Show 2010"; Ada Gem, Mineral & Fossil Club; Pontotoc County Agri-Plex, NE corner of state Hwy. 99 and Richardson Loop Bypass; Fri. 10-6, Sat. 9-5, Sun. 10-5;

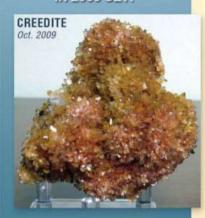
continued on page 32

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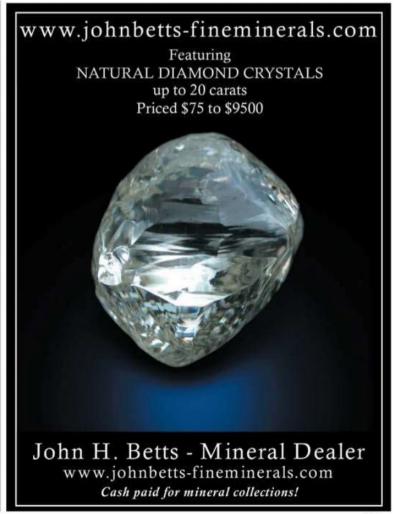
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### Artist Profile:

# Pippa Small

## Her Jewelry and Activism Make an Attractive Combination

"I collected as a child and believed things held emotions and memory, so I knotted and tied on all sorts of things to my wrists and neck, things I believed could protect or remind me of happy times or people."

Story by Jennifer Morkunas / Photos Courtesy of Pippa Small

ippa Small's jewelry has been influenced by many natural forms—shapes and textures from petals and leaves, the perfect spirals of shells, and the designs of diverse tribal communities. She has spent time in Asian rainforests, African deserts, and South American mountains finding inspiration for her designs. Small holds a Master of Arts in Medical Anthropology and began making jewelry in order to fund her degree. Her simple, but attractive, jewelry soon attracted the attention of the fashion world, which led to collaborations with high-profile fashion companies such as Gucci, Nicole Farhi, and Chloe.





Small buys and collects her stones, such as the pink tourmaline in this ring, from all over the globe.



These earrings are composed of aquamarine, citrine, and green tourmaline.



Paua shell, found only in shallow coastal waters along New Zealand, is featured in this simple ring.



The stones in these rhodochrosite and carnelian earrings show natural variations in shape and size.



When Small uses uncut stones and crystals in her designs, such as this turquoise necklace, the drill is her most important lapidary tool.

It takes Small a few hours to finish a given item in her wide collection, which includes necklaces, earrings and rings. The self-taught lapidary and jeweler admits, "I went through lots of trial and error" in her learning process. She describes her home studio as "a chaotic world of mountains of stones, shells, colored ropes, and drill bits, stringing material, solder irons, and odd bits picked up from travels." Rock crystal is her favorite stone to work with. "You find it all over the world," she says. "It is not expensive, yet to me it has so much personality and energy, especially pieces with prisms and interesting inclusions."

Small buys and collects her stones from all corners of the globe. "I work primarily in India, where there is a long tradition of stone cutting. Stones come from all over the world to be sorted and cut and polished in Rajasthan." In addition to working with a stone cutter in India, Small often uses uncut stones and crystals in her work. For this reason, her most important piece of lapidary equipment is the drill, which allows her to design around the stone's natural shape.

Traveling the world with her parents when she was a child made a lasting impact on Small's life. "I was very inspired in Africa—both Morocco and Tanzania—by the Berbers and Massia and their incredible style and world views and the astounding environments they live in," she says. Jewelry told stories to her, and she learned to express herself through bracelets and amulets. By the time she reached her teenage years, the entire lengths of her arms were covered in an array of multicolored stones.

"I collected as a child and believed things held emotions and memory, so I knotted and tied on all sorts of things to my wrists and neck, things I believed could protect or remind me of happy times or people," Small explains. "The jewelry became a sort of diary for me, an expression of where I had been and what I believed in."

Small finds spiritual concepts in jewelry fascinating and incorporates these consid-

erations when designing. "The significance and motivation for making and wearing jewelry in so much of the world is about other elements than just adornment and beautification—it is about protection, [and] the planets' influence on your destiny, enhancing fertility, and keeping away evil."

Small takes part in anthropological pursuits when she is not making jewelry, and has previously worked with grassroots nongovernmental organizations (NGOs) on human rights issues for indigenous peoples. An NGO is a legally constituted, nonbusiness organization created by persons who do not participate in or represent any government. Small advocates for land rights issues, cultural rights, biodiversity, and indigenous knowledge. "I found it fascinating, the world of activism-very inspiring, she says. "Now I work with local NGOs on economic development in committees, reviving traditional craft, working with recycled materials in slum areas, and ethical gold mines." She is hoping to do a joint UNESCO project in a slum area in Cairo, Egypt, that involves literacy, life skills, and jewelry making.

Small is an ambassador with Survival International. Survival is an international organization that works closely with local indigenous groups to provide a platform for tribal representatives to speak directly with the companies invading their land. Founded in 1969, Survival's educational work includes making information available about tribal peoples and how tribes are faring with regards to threats posed by multinational corporations. Small relates, "I have known about Survival since I was a teenager and always supported the work they do. They are the only NGO working on land rights campaigns with tribal people all over the world, to help them protect their land and ways of life. I became an ambassador as I have been making collections for Survival to sell on their Web site for a few years and the profits have been useful; also taking their name to a different audience."

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Rough smoky quartz crystals, some set in simple gold bezels, comprise this necklace.

With the permission of the chiefs of the Kuna Indians, Small spent some time with a traditional community on the tiny island of Soledad Miria, Panama. The Kuna have a secured territory on the Caribbean coast of Panama, and are famous for their popular traditional pattern, the mola. Used in women's blouses, the mola features brightly colored birds and other designs. Kuna women also adorn themselves with gold nose rings and gold charms of butterflies, birds, and sea creatures. All the animals and birds depicted in these bright, colorful patterns have stories and symbolic meanings to the Kuna. One of Small's collections is inspired by designs from Kuna molas, and each piece within this collection is one of a kind and handmade. The Kuna do not believe in mining and have refused large-scale mining concessions on their land. Instead, they pan gold from the rivers and melt it into flat sheets, which are then hammered, cut and etched. Small has worked with their goldsmiths to create earrings, butterfly charms, and chains of disks with beautiful, engraved mola patterns.

Small has also visited and worked with the Aymara and Quechua Indian peoples of Bolivia. The gold of Bolivia is a rich, warm color, is very pure, and is often found in naturally sculpted nuggets that are easy to work with. Urth Solution (www.urthjew elry.com) is a young company aimed at working with gold miners in Bolivia to raise standards and control the environmental impact of gold mines. This company helped Small gain access to the Tipuani gold mine in the Yungas region, east of La Paz, the administrative capital of Bolivia. Tipuani is an alluvial mine that runs as a cooperative working with the local community.

"We bought the gold from the mine, and then rather than ship it back to England, I decided to find a goldsmith in La Paz I could work with," says Small. "I found Javier, a brilliant craftsman who very quickly understood what I wanted to do with the gold. His father had been a miner and he had grown up in the Yungas not far from the mine."

Miners at Tipuani have managed to extract gold without the use of cyanide and are now focused on eliminating the use of poisonous mercury. Gold from this mine will be able to be sold at a premium once it reaches Fair Trade status. The label Fair Trade Certi-

fied<sup>™</sup> is a guarantee to consumers that strict economic, social and environmental criteria were met in the production and trade of the item. Additional money from the sale of gold from Tipuani will be circulated in the community to assist with health and education projects, and improve the safety of the mines.

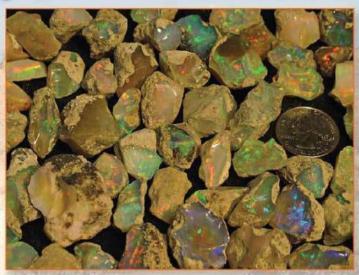
With the gold from Tipuani, Small says, "We made a collection of pure 24kt gold pebbles, making natural, graceful shapes that allowed the beauty of the gold to speak. We made beads molded on ancient pre-Columbian gold and stone beads that had been unearthed by plowing farmers. The shapes are rounded and soft and speak of the passing of time—the wind, water and earth creating shapes that feel smooth and comforting to the touch." These sculptures have been strung on colored alpaca wool for wear.

In Africa, Small currently collaborates on the made project (www.made. uk.com), in which the central idea is "trade, not aid," made's main intention is to train local artisans, improve their working conditions, and set them up in business by providing tools and materials. One group of tribal people, the Kalahari Bushmen, particularly sparked Small's interest. There are approximately 100,000 Bushmen in Botswana, South Africa, Angola, and Namibia, and they have lived there for tens of thousands of years. Diamonds were found on their reserve in the early 1980s, and over the next two decades, the government of Botswana forcibly removed the Bushmen. They now live in resettlement camps outside the reserve, and government policies have made return to their native land nearly impossible. Small, through the made project, seeks to help the Bushmen develop their craft work, open new markets for their wares, raise awareness of their plight, and advocate for them within the diamond industry.

Pippa Small has shops located in Santa Monica, California, and London, England. View her fine jewelry at her online shop at http://pippasmall.com.

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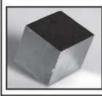
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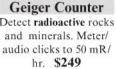
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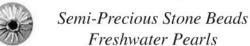
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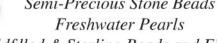
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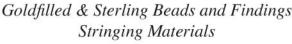


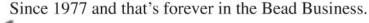
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### Show Dates from page 26

### **MARCH 2010**

free admission: demonstrators, fluorescent displays, deal ers, kids' fossil dig, spinning wheels; contact Ed Vermillion, P.O. Box 782, Purcell, OK 73080, (405) 527-6431; e-mail: okieed42@windstream.net; Web site: http://www.freewebs. com/agmfc/index.htm

26-28-BRIDGETON (ST. LOUIS COUNTY), MISSOURI: 50th annual show; Rock Hobby Club; Machinist Hall Auditorium, 12325 St. Charles Rock Rd.; Fri. 4-9, Sat. 10-7, Sun. 10-5; adults \$3.50, students \$2, children under 5 free; exhibits, museum and university special exhibits, demonstrations, dealers, supplies; contact Vickie Corley, 1727 Parkway Acres, St. Louis, MO 63043, (314) 521-8896 e-mail: Missouri-gem@sbcglobal.net

26-28-FORT COLLINS, COLORADO: 49th annual show; Fort Collins Rockhounds; Lincoln Center, 419 W. Magnolia St.: Fri. 4-8, Sat. 9-6, Sun. 10-5; adults \$3, (\$5 weekend pass), students under 18 \$1, children 12 and under free with adult; Minerals of the American West with a special focus on quartz, exhibits and demonstrations by club members and invited guests, door prizes, silent auction, grab bags, seven gem and mineral dealers; contact Dave Halliburton, 2506 Pear Court, Fort Collins, CO 80521, (970) 493-6168; e-mail: fcrock hounds@vahoo.com; Web site; fortcollinsrockhounds.org

26-28—INDIANAPOLIS, INDIANA: 12th annual show; Treasures Of The Earth Gem & Jewelry Shows; Indiana State Fairgrounds, Ag/Horticulture Bldg., 1202 E. 38th St.; Fri. 10-6, Sat. 10-6, Sun. 11-5; adults \$5 (3-day ticket), children under 16 free; jewelry makers, goldsmiths and silversmiths size, reconstruct, repair, design or make original jewelry from customer-selected gemstones, opals and crystals, wire wrap, wire sculpture, stone beads, pearls, stone setting, dealers, amber, opal, fossils, minerals, door prizes, grand prize, 500 Earth Science Club display, silversmithing demonstrations and classes, lampwork bead demonstration, wire wrapping classes; contact Van Wimmer Sr., 5273 Bradshaw Rd., Salem, VA 24153, (540) 384-6047; e-mail: vawimmer@verizon.net; Web site: www.toteshows.com

26-28—MACOMB, ILLINOIS: Fossil show; Mid-America Paleontology Society; Western Hall, Western Illinois University; Fri. 8-5, Sat. 8-5, Sun. 8-12; free admission; fossils only, buy, sell, swap, display, children's activities, silent auctions, keynote speaker Dr. Robert Frey, auction Sat.; contact Tom Williams, (815) 223-9638; e-mail: Paleotom234@dishmail.net; or Steve Holley, (309) 231-8861; e-mail: Ilfossil@hotmail.com; Web site: www.mid americapaleo.org

26-28—ORLANDO, FLORIDA: 41st annual show; Central Florida Mineral & Gem Society; Central Florida Fairgrounds, 4603 W. Colonial Dr.; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$4, students and seniors \$2, children under 12 and Scouts in uniform free with paying adult; sluice mining, faceting demonstrations, silent auctions, gem identification, Kids' Korner, mineralogist on site, door prizes, grand prize; contact James Johnstone, 12745 Newfield Dr., Orlando, FL 32837, (407) 625-6336; e-mail: jj030@msn.com; Web site:

26-28—SANDY (SALT LAKE CITY), UTAH: Show, "Gem Faire"; Gem Faire Inc.; South Towne Exposition Center/ Exhibit Hall 5, 9575 S. State St.; 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.

26-28—SARASOTA, FLORIDA: Show; Frank Cox Productions; Municipal Auditorium, 801 N. Tamiami Trail (Hwy. 41); Fri. 10-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203. Sarasota, FL 34236, (941) 954-0202; e-mail: frank cox@comcast.net; Web site: www.frankcoxproductions.com

27—WOODBURY, MINNESOTA: Annual show; St. Croix Rockhounds, Valley Creek Mall, 175 Weir Dr.; Sat. 9-3; free admission; educational show, no dealers, rock and mineral identification; contact Bill Cordua, 414 Lewis St., River Falls, WI 54022, (715) 425-3139; e-mail: william. s.cordua@uwrf.edu

27-28-ANGELS CAMP, CALIFORNIA: Annual show and sale; Calaveras Gem & Mineral Society; Calaveras County Fairgrounds, Hwy. 49 at Frogtown USA; Sat. 10-5, Sun. 10-4; adults \$4, kids 12 and under free with adult; rocks, minerals, jewelry, beads, supplies; contact Tak Iwata, (209) 928-5579; e-mail: Tak2me@msn.com

27-28-CHAMBERSBURG, PENNSYLVANIA: 32nd annual show; The Franklin County Rock & Mineral Club; Shalom Christian Academy, 126 Social Island Rd.; Sat. 10-5, Sun. 10-4: adults \$4, children under 12 free with adult; jew-



elry, gemstones, minerals, fossils, door prizes; contact Mike Mowen. (717) 264-9024; e-mail; mlmo@innernet.net

27-28—HAMBURG, NEW YORK: Show, "Trilobites: Under the Seas of Western New York"; The Buffalo Geological Society; Market & Grange Bldgs., The Fairgrounds in Hamburg, 5600 McKinley Pkwy.; Sat. 10-6, Sun. 10-5; adults \$5, children 12 and under free; demonstrations, beads, jewelry, private gem collections, unique gifts, children's mini-mine, "Grandpa's Corner"; contact Steve Birtz, 2230 Fix Rd., Grand Island, NY 14072,(716) 773-6386; e-mail: SBirtz@aol.com

27-28—HOLYOKE, MASSACHUSETTS: Show; Connecticut Valley Mineral Club; Holiday Inn at Ingleside, I-91 Exit 15; Sat. 10-5, Sun. 10-4; adults \$4, children 12 and under free with adult; minerals, gemstones, jewelry, crystals, beads, fossils, lapidary and mineral arts, demonstrations, exhibits; contact Lee Champigny, (413) 320-9741; e-mail: pullG4fun@verizon.net

27-28—LEMOORE, CALIFORNIA: 2nd annual show; Lemoore Gem & Mineral Club; Trinity Hall; Sat. 10-6, Sun. 10-6; contact Judy Pereira, 335 W. D St., Lemoore, CA 93245, (559) 924-4052

27-28—MONROE, WISCONSIN: 40th annual show, "Colors of the Earth"; Badger Lapidary & Geological Society; Monroe High School, 1600 26th St.; Sat. 9-5, Sun. 9-5; admission by donation; 10 dealers, fine minerals, fossils, gems, jewelry, expert speakers, videos, educational exhibits, demonstrations, hourly door prizes, club sale table, kids' games; contact Dan Trocke, 4771 County Rd. II, Highland, WI 53543-9286, (608) 215-5307; e-mail: dtrocke@acscm.com

27-28—PLYMOUTH MEETING, PENNSYLVANIA: Show and sale, "Philadelphia Mineral Treasures and Fossil Fair"; Philadelphia Mineralogical Society; LuLu Temple, 5140 Buttler Pike; Sat. 10-5, Sun. 10-4; adults \$5, children \$1; minerals, fossils, books, gems, jewelry, free kids' specimens and fossil dig, educational displays, personal collections, scouting merit badge information, professional speakers; contact Duglas Klieger, 26 Cabot Ct., Chesterbrook, PA 19087, (610) 644-2492; e-mail: dklieger@verizon.net; Web site: www.PMS.Moonfruit.com

27-28—ROSEVILLE, CALIFORNIA: 48th annual show; Roseville (Placer County) Fairgrounds, 800 All America City Blvd., off Washington; Sat. 10-5, Sun. 10-4; adults \$5, seniors (60+) \$4, kids 12 and under free; more than 30 vendors, crystals, gold, geode cracking, beads, gemstones, fossils, polished stones, handcrafted jewelry, opal, world-class mineral specimens, tourmaline, sunstones, bugs in amber, mineral identification, "Kids' Junction", demonstrations, silent auctions, exhibits, raffles, lapidary shop open house, information and discount coupon on Web site; contact Gloria Marie, (916) 216-1114; e-mail: gloriarosevillerockrollers@gmail.com; Web site: www.rockrollers.com

27-28—SAYRE, PENNSYLVANIA: 41st annual show; Che-Hanna Rock & Mineral Club; Athens Twp. Volunteer Fire Hall, 211 Herrick Ave.; Sat. 9-5, Sun. 10-5; adults \$3, students \$1, children under 8 free; Carnegie Museum exhibits and silent auctions, Paleontological Research Institute fossil exhibit, kids' activities, club displays, retail dealers; contact Bob McGuire, 224 Church St., Lopez, PA 19628, (570) 928-9238; e-mail: uvbob@epix.net

27-28—SWEET HOME, OREGON: 62nd annual show; Sweet Home Rock & Mineral Society; 1641 Long St.; Sat. 10-6, Sun. 10-4; contact Joe Cota, (541) 451-2740

28—BOISE, IDAHO: Show, "Rings & Things BeadTour"; Rings & Things; Best Western Vista Inn at the Airport, 2645 Airport Way; Sun. 12-4; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, (800) 366-2156; e-mail: drobertson@rings-things.com; Web site: www.rings-things.com

### **APRIL 2010**

2-4—EUGENE, OREGON: Show, "Gem Faire"; Gem Faire Inc.; Lane County Events Center/Exhibit Hall, 796 W. 13th Ave.; 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

3—MISSOULA, MONTANA: Show, "Rings & Things BeadTour"; Rings & Things; Hilton Garden Inn, 3720 N. Reserve St.; Sat. 12-4; free admission; gemstones, bead strands, wholesale prices, findings, stringing supplies; contact Dave Robertson, P.O. Box 450, Spokane, WA 99210, continued on page 50



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# Collecting "Old Classic" Minerals

### **PART II:**

### Collector Favorites from Around the World

Story and Photos by Bob Jones

Author's Note: In my first article in this series on classic minerals ("Collecting 'Old Classic' Minerals", December 2009), I described several species in depth and set forth the criteria that make a mineral a classic. In this article, I'll add to my initial list of classic minerals by describing pink fluorite from Switzerland, sulfur from Sicily, hematite from Elba, phosgenite from Sardinia, French azurite, Afghanistan's blue lapis, and German silver minerals. The information contained in these articles is intended to help the reader spot a classic mineral for sale.



Switzerland is famous for its classic pink fluorites, found high in the Alps.

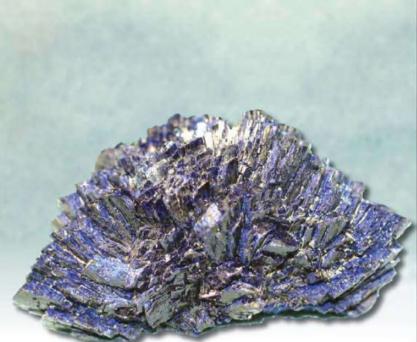
lassic pink fluorites, some of which sport an intense strawberry red color, are found sparingly in the Swiss and French Alps. There is no Swiss fluorite mine as such. Rather, crystals are found randomly, scattered in individual seams and pockets that can be uncovered through the efforts of a rockhound or the movement of a glacier.

The finest specimens of this delicately colored calcium fluoride are crystals attached to smoky quartz crystals. Small clusters of pink fluorite occur on the rock matrix and sometimes are found without matrix. Those attached to quartz are, however, more highly prized and eagerly sought.

The supply of pink fluorite from areas such as Grimsel and Goshener, Switzerland, and the Chamonix area of France has never been great. Specimens tend to trickle out of the high Alps, thanks to the arduous, and often dangerous, efforts of amateur and professional rockhounds called *strahlers*. These people risk life and limb, sometimes hanging from a rope along the face of a granite cliff, to seek small seams and openings that just might yield a trove of quartz and fluorite crystals.

One of the oldest mining regions in the world is Sar-e-Sang in the Kokcha Valley of Afghanistan. Here, the intensely blue gem known as lapis (actually, the mineral lazurite, with other minerals included) has been mined for centuries. Lapis artifacts have been found in Egyptian tombs dating to 3,000 BCE (Before the Common Era).

34 www.rockngem.com Rock & Gem



This rosette of azurite is typical of one type of crystal cluster for which the deposit at Chessy, France, is well known.



Although the red color of this pyrargyrite specimen has darkened, its crystals remain sharp and lustrous.



Ancient German silver mines produced a host of fine red proustites, which are now considered classic specimens.



The appeal of Sicily's classic, bright-yellow sulfur crystals is that they often occur in perfect textbook form.

Most of the gem production from this deposit is massive material suitable for carving and gem making. For the collector, fine, reasonably sharp dodecahedrons of lazurite embedded in white marble have been offered for sale, especially during the last few decades. These exhibit a strong blue color which contrasts sharply with the white matrix.

Initially, mining of the white marble deposit was carried on by small groups or individuals who worked arduously to extract the blue stone from the hard matrix. The supply of crystals was virtually nil because the methods used—heating the rocks with fire and shattering them with cold water—did not encourage crystal salvation! Today, mining at Sar-e-Sang is much more efficient, when the area is at peace. Care is now taken to save crystals and etch them from the calcite. This has dramatically improved the supply of lazurite crystal specimens.

In addition, Levi Straus & Co. has unknowingly created a great market for low-grade lapis mixed with white calcite. The term "denim" has been applied to this material and it is being marketed as lapidary rough.

France certainly has produced its share of classic minerals, but the best known source is Chessy, near Lyon, in the Rhône region, where amazing azurites and malachite pseudomorphs after cuprite were once found! Originally, the Chessy azurites were given the name chessylite to distinguish them from azurite from other sources.

As nearby chalcopyrite broke down, releasing copper ions, watery solutions carried the copper ions into the Chessy area, which was rich in sandstone and marly clay. (Marl is the end product of seashell compaction.) The copper reacted with calcite from the marl, forming azurite.

During the time the mine operated (1811-45), huge quantities of azurite and other copper species were mined. There are strong suspicions that the Romans worked the deposit after establishing nearby Lyon in 400 BCE. How long they may have worked the deposit, or whether they actually did, has not been established. We do know that mining took place beginning in 1440 CE, but apparently not for azurite, which was not discovered until 1811.

Once azurite mining started, a fantastic discovery was made: a small cave lined with huge azurite crystals that produced vast quantities of the blue mineral. Once mining of azurite, malachite, and other species ended in 1845, the deposit was closed and has never been reopened.

Chessy azurite occurred as individual balls of radiating crystals, small geodelike masses that, when opened, were lined with azurite crystals. The prizes are clusters of sharp, dark blue prisms in either tabular or prismatic habit. Most appealing are the rosettes, crystal groups, and thick tabular plates, all with superior luster.

Malachite pseudomorphs were also found at Chessy, but the prize pseudomorphs are the single crystals of malachite after cuprite that occurred abundantly in the clay. The cuprite formed as octahedrons and, over time, altered on the surface to malachite.

The island of Elba is known historically as the place Napoleon I was imprisoned in 1814, and from which he escaped to attempt a second takeover of France. Among mineral collectors, it is known for two superb minerals, bladed hematite and associated pyrite crystals.

The hematite was mined at Rio Marino in lovely groups of interesting curving, disclike blades that average about an inch across. The blades are tightly packed together, lustrous and sharp. Botryoidal hematite also occurs here, but the bladed hematite is more attractive. Some of the hematite crystals have a bright, thin rainbow tarnish on them.

The pyrites from Elba are typical pyritohedrons embedded in tightly packed black blades of hematite. They can range from under an inch to as much as 7 inches across. The crystals are sharp, with growth patterns on their faces.

Phosgenite, a lead chloro-carbonate, is derived from the breakdown of galena. It occurs in a number of galena sources, usually as a minor secondary mineral, but at Monti Poni, in the Iglesias district of Sardinia, phosgenite formed in superb, lustrous crystals of stunning size.

Sardinia phosgenite ranges in color from gray-white to tan to yellow-brown. The side prism faces sometimes show a splintery habit, but the terminations, which are flat, can have a strong mirror finish. The terminations on the larger crystals can be several inches across, with the largest reported crystals being 6 inches long. These far exceed any phosgenite found at other sources and certainly qualify for clas-



Some of the surviving wire silver specimens from classic German mines are really spectacular.

It is tempting to go on and on about the early European silver classics I briefly mentioned in Part I. After all, the silvers from Kongsberg, Norway, are astounding and rank as the top native silver specimens ever found. Perhaps it would be more helpful to describe just one of several very important European mines where modern mining techniques actually developed.

The first mining academy, the Bergakademie, was established in Freiberg, Germany, in 1765. This was the first formal effort to bring together the knowledge of mineralogy, geology and mining. Today, a new museum in Freiberg provides visitors with a very informative look at early mining here and houses an exceptional mineral display.



Large plates of nicely crystallized yellow sulfur crystals were found in abundance in Sicily.

Why open a mining academy in Freiberg? Because this is where huge deposits of silver ores were discovered in the early years of the second millennium! By the 1100s, silver mining had commenced in the Freiberg area. Among the many mines, the Himmelsfurst was a leading producer of fine native silver, amazing proustites, pyrargyrites, choice argentites, wonderful acanthites, fine polybasites, and rare miargyrite. All these species were found in quantity and qualify today as classics.

The native silver from Freiburg occurred in clusters of tangled, curling wires on rock. Some rivaled the silvers later mined in Norway, but most of what you might see today are small specimens with wires an inch long at best.

Proustite from Freiburg is exceptional, equaled only by the classic proustite from Chanarcillo, Chile. Proustite is a silver sulfosalt composed of atoms of silver, antimony and sulfur. Crystals 7

inches or longer, usually in tight subparallel clusters, were found here. The prismatic crystals are often striated, and usually form subparallel groups. When first mined, their color is a quite intense red, but upon exposure to light, the color starts to darken until the red is lost and the specimen appears black. Any nice, red Freiburg proustites still available have been carefully protected against strong light.

Pyrargyrite is an equally important ore of silver and a silver sulfosalt. It is a darker red, never as intense as that of proustite, and will also darken in strong light. Its crystals form in tight clusters, sometimes in a blocky form but also in dogtooth form.

Another silver mineral reported to come from Germany is argentite. I say "reported" because, while it may well have been found in quantities, argentite has a nasty habit of becoming something else as its temperature drops. Above 179 degrees C, argentite is stable, forming fine cubic crystals that are often nicely modified by the dodecahedron. As the temperature drops, however, the argentite keeps the same crystal shape, but its atoms move to a position that requires less energy to be stable. At that point the argentite has become a monoclinic specimen called acanthite!

While these deposits have produced marvelously collectible classics, maybe the most important "collectible" to come from this area isn't even a mineral, but a book about mining, the first document indepth the methods and

to document in-depth the methods and techniques of mining ores!

Georg Bauer was a doctor who worked with miners and mining companies in the mid-1500s. In his position, he observed and learned a host of mining techniques and se-

sic status.



This small, smoky phosgenite from Monti Poni, Sardinia, sits atop another phosgenite coated with cerussite.

crets. Under the pseudonym Agricola, Bauer wrote a tome entitled *De Re Metallica*. Through written descriptions and copious wood cut illustrations, Agricola shared all the mining techniques that had been developed in the German mines and held secret until that time!

The book, written in Latin, was very useful in those early days, when that language was in common usage. Luckily, Herbert Hoover, a mining engineer and future President of the United States, and his wife, Lou Henry, translated *De Re Metallica* into English. In 1950, Dover Publishing Co. reprinted the original Hoover work and you can still find a copy for sale through rare and out-of-print book sellers like Rocks of Ages, P.O. Box 674, Placitas, NM, 87043.

Another European mineral of considerable historic value that is still available today is sulfur. The best specimens of this bright yellow element are found in Sicily. Sulfur is the product of two actions, volcanism and organic action. Sulfur is a critical ingredient in gunpowder. The conquering Spanish forced Mexican natives to crawl down vents in active volcanoes and scrape the yellow element from the vent walls. Needless to say, the toxic fumes didn't do the miners much good!

A much safer source of sulfur is the biogenetic actions of bacteria when feasting on hydrogen sulfide (H<sub>2</sub>S). This gas, with an odor reminiscent of rotten eggs, is the product of the breakdown of some metallic sulfides in an oxygen depleted environment. Such an environment exists where bodies of water that are rich in organic matter become trapped and stagnate. As the water evaporates, the minerals in the solution become more concentrated and are eventually deposited as evaporites at the bottom of a lagoon or lake.

In the case of Sicilian sulfurs, trapped lagoon waters dating as far back as 65 million years slowly evaporated and bacteria

gradually broke down the hydrogen sulfide present, releasing sulfur atoms. While this was going on, dying life in the form of diatoms formed solid diatomite, along with gypsum, limestone and marl, which is rich in shell life remains. All this resulted in the release of native sulfur, which developed into magnificent crystals in several places on Sicily.

These deposits were known for centuries. Evidence shows that sulfur was mined and exported from Sicily as early as 900 BCE. Later, sulfur was shipped to Greece and Rome, where it was used in the bronze smelting process and was one of the ingredients in "Greek fire", a flaming, lethal weapon of war that was squirted on enemy ships, with devastating effects.

The sulfur from Sicily forms "textbook crystals", so called because they are as perfect as the drawings in mineral textbooks. It forms orthorhombic crystals that show tabular or bipyramidal form, but can also be granular. Crystals can be well over 2 inches on an edge, but most are an inch or so. Sulfur is brittle and has a conchoidal fracture. Nice, brilliant, lustrous plates of intergrown crystals also occur. Their color varies; when rich in selenium, they can be orange. If heated, the mineral's structure changes, resulting in a change in color; it becomes orange, then red, and eventually a black, sticky mess.

Sicilian sulfur occurs with other lovely minerals, including white celestite in fine prisms, superb pseudohexagonally twinned aragonite, fluorescent calcite, and gypsum, variety selenite. The finest specimens are combinations of sulfur with these associates.

The sulfur mines of Sicily have pretty well shut down. In Texas and elsewhere, however, sulfur is brought to the surface of the earth by injecting steam into salt domes and other rock formations. This melts the sulfur so it can be pumped to the surface as a stream of orange liquid that turns yellow as it cools.

Fine sulfur specimens from Sicily can still be seen for sale. The goal is to obtain a perfect textbook crystal specimen or, if you are a student of fluorescence, a fine combination of sulfur, which does not fluoresce, and lovely celestite, calcite and aragonite, all of which show a bright response.

As you attend shows, watch for examples of these classics. They often are very costly, but by adding a classic to your collection when you can afford to, you add an historical dimension to your collection that is well worth the investment.



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#### **Natrolite**

Na<sub>2</sub>Al<sub>2</sub>Si<sub>3</sub>O<sub>10</sub>•2H<sub>2</sub>O

Natrolite, also called hydrated sodium aluminum silicate, is a zeolite mineral. Zeolites are hydrous (water-containing) silicates with a composition similar to feldspar. They usually form as secondary minerals, along with apophyllite, heulandite, quartz, and other minerals, in vesicles of basalt. These vesicles were created when lava cooled and hardened around gas bubbles.

The Deccan Traps around Poona, India, are famous for zeolite minerals.

U.S. localities include New Jersey and California, and natrolite is especially associated with the California state gemstone, benitoite. Natrolite coats the benitoite crystals and is dissolved away using hydrochloric or muriatic acid. Some of the natrolite is preserved to provide a contrasting snow-white background to the deep blue benitoite.



Natrolite can form long prismatic crystals (left), compact fibrous masses coating other minerals (back), or radiating clusters of needlelike crystals filling vesicles in other rocks (right).

Also called "needle zeolite," natrolite forms needle-shaped crystals that cluster in radiating sprays. This is known as acicular (pronounced "uh-sick-yoo-ler") crystal form. Larger crystals take the form of long, squared prisms capped by low pyramids. Crystals are vertically striated and tend to be translucent white or clear, with vitreous or pearly luster. Sometimes, though, natrolite grows as a compact, fibrous crust. In this massive form, it tends to be opaque, with a dull, silky luster.

Natrolite has important industrial uses.

All zeolite minerals have porous molecular structures that allow some ions to pass through and others to be excluded or trapped. Therefore, natrolite acts as a natural chemical filter and has been used as a water softener and for treating industrial wastewater containing cyanides and heavy metals.

-Jim Brace-Thompson

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#### **CRYSTAL FORM WORD SEARCH**

Find these words that mineralogists use to describe mineral crystals.

Acicular
Cubic
Hexagonal
Isometric
Monoclinic
Orthorhombic
Prismatic
Tetragonal
Triclinic
Trigonal

#### Alaska's State Rockhound Symbols

Alaska named gold its state mineral in 1968. The yellow metal brought thousands of people "North to the Future", as the state's motto says, during the state's Gold Rush Era (1880-1914). In 1880, Joe Juneau found gold at a spot that became the state capital. In the 1800s, 32,000 people inhabited Alaska. That number doubled by 1900. Other discoveries were made in Nome (1899) and Fairbanks (1904). Recreational gold panning remains a popular—and sometimes profitable—activity.

Also in 1968, Alaska designated jade its state gemstone. Most Alaskan jade is spinach-green nephrite, a valued gemstone. Earlier peoples embraced jade for its hardness, which made it a useful tool. Diamond is hard, but brittle, and can shatter if struck just right; jade is not only hard, but tough, due to a dense, interlocking structure. Dur-

ing World War II, 200 tons of asbestos, along with 11 tons of jade, were mined from a deposit on the Kobuk River. Artifacts made from this jade have been found in archeological sites along the Bering, Pacific, and Arctic coasts, indicating trade among ancient peoples. Other famous Alaskan jade deposits are located on the Dall and Shungnak rivers and the Seward Peninsula's Jade Mountain.

The woolly mammoth, Mammuthus primigenius, became Alaska's state fossil in 1986. This extinct member of the elephant family roamed the Pleistocene tundra 1.6 million to 10,000 years ago. Frozen carcasses found in



Alaska's state symbols include gold, jade, and the fossilized remains of the Pleistocene woolly mammoth.

Siberia show they were protected by a layer of fat, an outer coat of coarse hair, and a woolly undercoat. Fossil bones emerge when permafrost thaws or is eroded by rivers, and during gold rushes, miners washed bones out of hillsides. Native peoples carved tools from the tusk ivory. Recent generations have obtained ivory from fossil deposits, but their ancestors lived alongside and hunted mammoths.

-Jim Brace-Thompson



#### Take the Quiz, Win a Prize!

The Quiz is open to U.S. residents 17 and younger. All the questions can be answered by carefully reading *Rock & Gem* Kids. Mail your answers to **March Quiz**, *Rock & Gem* magazine, P.O. Box 6925, Ventura, CA 93006-9899. Five winners will be drawn from the valid entries received by Mar. 31, 2010. Valid entries must include the correct answers, the entrant's name, age and address, and the signature of a parent or guardian. This month's prize is a gemstone keychain and dyed geode generously donated by *Rock & Gem* Kids reader Jessie Harper.

1. Natrolite is a mineral.
2. The natrolite coating is removed
from benitoite crystals using
or acid.
3. Needle-shaped natrolite crystals
that cluster in radiating sprays are said
to have crystal form.
4. Jade is not only, but
, due to a dense, interlocking
structure.
5. The woolly mammoth became
extinct years ago.

#### ROCKHOUND'S BOOKSHELF:

#### What's So Great About Granite?

by Jennifer H. Carey

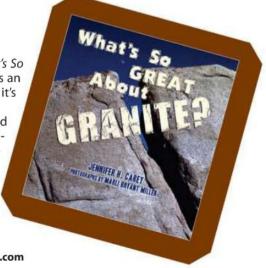
Who knew you could fill a book with information about just one rock type? In What's So Great About Granite? (Mountain Press Publishing Co., 2009) author Jennifer H. Carey takes an in-depth look at this common and important rock type: how it's formed, what minerals it's composed of, and where to find it in nature.

Identification is not a simple as it may seem; there are several types of granite, and other types of rocks may resemble granite. Carey explains how to tell the difference. Illustrations take the reader below Earth's surface to show how granite is formed. Close-up photos describe the different types of granite, which sometimes occur in the same rock. Photos of rock formations help explain how granite weathers.

An Index lists places you can visit in the United States to see granite formations and a Glossary explains the terms used in the book. The 104-page book is illustrated by 67 color photographs and 22 color illustrations and cartoons. It retails for \$18.

-Lynn Varon

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39



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## ock Science

#### James Smithson's Legacy

In the late 1790s, scientists debated the composition of "calamine," a mineral that most assumed to be zinc oxide. In 1800, however, a 35-year-old English chemist named James Smithson demonstrated that calamine actually consisted of two minerals, zinc oxide and zinc carbonate. Smithson's ability to differentiate oxide from carbonate minerals marked a major advancement in mineralogy. Although zinc carbonate was later named "smithsonite" in his honor, Smithson was destined to build a far greater legacy.

Smithson was born James Lewis Macie, the illegitimate and unacknowledged son of Hugh Smithson, a British subject and the first Duke of Northumberland, in France in 1765. Smithson later adopted his father's name, became a naturalized British citizen, and in 1786 earned a degree in chemistry from Pembroke College (University of Oxford).

Deeply interested in chemistry and mineralogy, Smithson devoted much of his life to the qualitative analysis of minerals. Perhaps the most significant of Smithson's many papers on mineralogy is "A Chemical Analysis of Some Calamines", which identifies the mineral later named for him.

Smithson inherited a sizeable estate from his mother and, through shrewd investing, increased its value substantially over the years. Smithson died in Italy on June 27, 1829, and was buried in Genoa. He left most of his estate to his nephew Henry James Hungerford—with a contingency clause directing that, should his nephew die without children, the estate would go to "the United States of America, to found at Washington, under the name of the Smithsonian Institution, an Establishment for the increase and diffusion of knowledge ...".

When Hungerford died in 1836, leaving no heirs, the U.S. Congress accepted Smithson's bequest: 104,960 English gold sovereigns. The sovereigns were melted down and re-minted into U.S. coinage worth \$508,318, the seed money for what would become the Smithsonian Institution.

Congress founded the Smithsonian Institution in 1846 as the national museum of the United States. In 1904, telephone inventor Alexander Graham Bell, then a Smithsonian regent, brought Smithson's remains from Genoa to Washington, D.C., where they were reinterred in a tomb in the Smithsonian's original "Castle" building.



Zinc carbonate was named smithsonite in honor of chemist and benefactor James Smithson.

The reasons behind Smithson's bequest to the United States, a nation he had never visited, remain unclear, but historians cite three possibilities. One was a desire to found an institution that would outlast his titled father's British dynasty. Another was disenchantment with an English social system that had failed to acknowledge him as the son of a duke. Finally, Smithson may have admired the revolutionary spirit of the United States and believed his gift would have greater impact on a young nation that had few major research and educational institutions.

Whatever Smithson's motivations were, the impact of his bequest cannot be argued. Today, the Smithsonian Institution is the world's largest museum complex, consisting of 16 museums, the National Zoo, and several prominent research centers. Given his love of minerals, Smithson would be proud of the National Museum of Natural History, where the original mineral gallery was replaced in 1997 by the Janet Annenberg Hooker Hall of Geology, Gems and Minerals. This \$18 million, 9,000-squarefoot hall displays 2,450 mineral specimens representing 600 species. Among these specimens are 548 gems, including the 45.5-carat Hope diamond.

Smithson might also be particularly pleased by the display of two superb specimens of smithsonite, one from Tsumeb, Namibia, and the other from Magdalena, New Mexico.

Steve Voynick is a science writer, mineral collector, former hardrock miner, and the author of books like *Colorado Rockhounding* and *New Mexico Rockhounding*.



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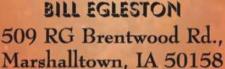
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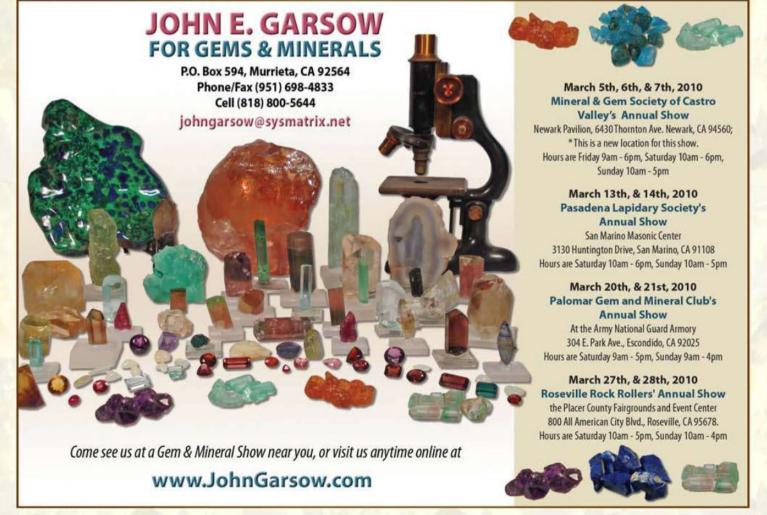


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## How GREEN

### A Look at Where the Industry's Been and Where It's Headed on the Road to Accountability

## Are We?

he gem and jewelry industry truly is a multifaceted field-a supply chain that involves and supports individuals from around the world and all walks of life. As supply and demand, discoveries and production methods have evolved over time, we have learned (perhaps the hard way) that change is essential to survival.

The need for change has gained momentum in recent years as we strive to meet the social, environmental and ethical standards our customers and constituents are requesting. Progress has been made, but there's still more to be done and the road to success may be long and costly. We must be dedicated to this effort and prove we are in it for the long haul.



A hand-painted illustration from John Mawe's book shows the erosion damage on a hillside caused by mining practices.

A sketch of the King's Light Infantry camp in Mogok, Burma, for the Feb. 19, 1887, edition of the Illustrated London News.

John Mawe, a British mineralogist, publishes his book, "Travels in the Interior of Brazil," which illustrates the use of slaves to mine diamonds, gold and topaz in its text and drawings. The book's images also show significant environmental damage, such as rivers that were diverted by aqueducts so the slaves could find gems in the alluvial beds.

California prohibits hydraulic mining, which utilized water cannons to wash the slopes of rivers to recover gold ore during the California Gold Rush. A single water cannon with an 8 inch nozzle would force 16,000 gallons of water a minute and move 4,000 cubic yards of earth in one day. Nearby hillsides and farm lands were greatly damaged by the runoff; the effects of mercury, cyanide, arsenic and acids that contaminated the soil and water as a result of the runoff were recognized later on.

#### 1885

The British annex Upper Burma, an action that converts Burma into a province of India, following the third Anglo-Burmese War. The commerce of gemstones from Mogok, Burma, began to be re-established with the West soon after. In this view of the camp of the King's Light Infantry at Mogok in 1887, small-scale miners toil while British soldiers look on and oversee activities. Burmese miners are shown carrying baskets of recovered gem-bearing material.









In a tanzanite mining area in Merelani, Tanzania, a miner stands in a shaft next to an air ventilation hose.

#### 1910

The United States Bureau of Mines is established to focus on worker safety, accident prevention and improved working conditions in coal, diamond and colored stone mines. It became necessary to improve air quality in order to mine deeper into the earth, so engineers developed a technique to force air into and draw it out of the pits where the miners worked. In 2002, 42 miners died in a tanzanite mine in Tanzania after an oxygen pump stopped working.

#### 1957

The Federal Trade Commission publishes Guides for the Jewelry, Precious Metals, and Pewter Industries, which aims to protect the industry and public from "unfair methods of competition, unfair deceptive acts or practices and other trade abuses." The word "gold," for instance, can only be used with items made entirely of 24K gold, and individuals at all levels of the trade are required to disclose treatments, synthetics and imitations to customers. The quide is revised in 1996 and 2001.



This photograph from George F. Kunz's Ivory and Elephant was taken in Zanzibar, an intermediate stop for the African ivory trade before the tusks were exported worldwide.

#### 1989

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) moves the African elephant from Appendix II, a classification that allows controlled international trade of the animal under a permit system, to Appendix I, which prevents all international trade. Widespread poaching—to extract ivory for use in jewelry, vases, statues, etc.—played a large hand in the African elephants' endangerment. This trade ban caused the price of ivory to drop, and populations of African elephants began to recover in some countries.

#### 1992

The Mines and Mineral Act of 1992 is established in Sri Lanka to prohibit anyone under 18 from participating in gemstone mining. Amnesty International recognizes that child labor is an ongoing, multifaceted issue in any industry: "Some argue that prohibiting child labor completely would increase the economic deprivation of extremely poor families who often depend on money brought in by children for their

basic needs. Others say that removing children from some industries will only force them onto the streets or into more dangerous and exploitative forms of work."

#### 1996

Pik Botha, South Africa's Minister for Mineral and Energy Affairs, estimates that every ton of gold mined in his country results in one death and 12 serious injuries. Rock falls, tunnel collapses, fires, heat exhaustion and more—not to mention long-term effects such as respiratory illnesses—contribute to making mining one of the most dangerous professions. The International Labour Organization held the Safety and Health in Mines Convention a year earlier to outline ways mining operations could eliminate or minimize safety and health risks; only 23 countries are reported to have ratified the Convention's quidelines.

#### 2000

A dam used to hold the mine tailings from the Aurul S.A. Baia Mare Company's gold mining operations in Romania fails due to heavy rain and melting snow, causing cyaniderich tailings waste to be released into the Somes, Tisza and Danube Rivers before reaching the Black Sea. As a result of this and other cyanide incidents at gold mining facilities, the "International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold," began to be developed and written.

#### 2003

The Kimberley Process Certification Scheme, created by the World Diamond Council, becomes a national law in participants' countries. This system works to prevent diamonds used to fund conflict (also known as "blood diamonds" or "conflict diamonds") from entering the legitimate diamond supply chain. It applies to diamonds when they cross an international border and requires the stones to be sealed in tamperresistant containers and accompanied by forgery resistant, conflict-free certificates with unique serial numbers.

#### 2003

The first "green gold" jewelry line is produced. The Certified Green Gold Program aims to produce metals in an environmentally and socially sound way in 12 Afro-Colombian communities. The certification criteria, which is endorsed by the Association for Responsible Mining, includes not using toxic chemicals in the extraction process, monitoring the silt load into streams, rivers and lakes, and marking the origin of the gold or platinum in favor of the respective municipality (for royalty purposes).

#### 2004

The Chair of the Kimberley Process announces that less than 1 percent of diamonds traded internationally are conflict diamonds, a significant improvement from the 4 percent prior to the establishment of the Kimberley Process.

#### 2005

The Diamond Development Initiative (DDI) is formally launched to address the political, social and economic challenges facing the artisanal diamond mining sector. DDI's first study, "Dealing for Development?: The Dynamics of Diamond Marketing and Pricing in Sierra Leone," aims to ensure diamond diggers, miners and communities benefit more from the millions of dollars worth of diamonds they help produce.

#### 2006

Festus Mogae, President of the Republic of Botswana, says, "For our people, every diamond purchase represents food on the table; better living conditions; better healthcare; potable and safe drinking water; more roads to connect our remote communities; and much more." Diamonds, discovered in Botswana in 1967, play a huge role in the nation's fast-growing economy and helped establish more than 300 schools. DTC Botswana is founded in May to plan the growth of Botswana's diamond industry economy.



Artisanal miners in the Mavuco area of Mozambique work with picks and shovels to recover copper-bearing tourmaline.

#### 2007

The Madison Dialogue Ethical Jewelry Summit is held in Washington, D.C., in October. Small-scale miners, NGOs, companies representing third party verification, jeweler organizations and major jewelers discuss environmental and societal effects of mining raw materials in source countries. The summit participants' final declaration: "We believe there is an opportunity to make a difference in the lives and communities of artisanal/small-scale miners and other marginalized workers worldwide, by developing and implementing robust standards for the production of ethical and fair trade metals, diamonds, gems and jewelry. We also encourage governments, where needed, to develop policies and regulations that protect these miners, workers and their communities."

#### 2008

The Tom Lantos Block Burmese JADE (Junta's Anti-Democratic Effort) Act is enacted on July 29. The ban blocks Burmese jadeite and ruby from entering the U.S. through



Burmese (Myanmar) jadeite and ruby

third party countries, such as Thailand, China, Malaysia, Taiwan and Singapore, in an effort to withhold a main source of revenue from the ruling government (or junta) that has caused the displacement and exploitation of countless Burmese citizens.

43

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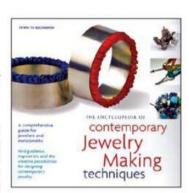
## ICKS & PANS

#### **BOOK REVIEW:**

#### Encyclopedia of Contemporary Jewelry Making Techniques

by Vannetta Seecherran

Lapidaries looking for inspiration with a contemporary edge can check out *Encyclopedia of Contemporary Jewelry Making Techniques* (Interweave Press, 2009). In it, author Vannetta Seecherran covers the basics of working with a variety of materials to create jewelry with modern flair.



Certainly, the most familiar section for the lapidary is Chapter 1, Metal and Wire. It explains how to use tools to cut, pierce, solder, pickle, anneal and polish metal, and bend wire. Chapter 6, Casting, also covers familiar territory using resin, silicone and plaster.

The information given in this book, such as descriptions and photos of tools, is basic. The text deals with techniques; there are no step-by-step projects. It is intended to inspire the creative use of a variety of materials in jewelry making.

Since the book focuses on contemporary jewelry, the bulk of the text treats media that are not in the lapidary's usual repertoire: plastic and rubber, fabric, fibers and leather, paper and paper pulp, wood, ceramic, glass and concrete. If you're willing to experiment, however, incorporating some of these nontraditional materials into your stone- and metal-work may add dimension to your lapidary projects.

The softcover *Encyclopedia* is 160 pages long and includes hundreds of clear color photos. It retails for \$26.95.

-Lynn Varon

Interweave Press, 201 E. 4th St., Loveland, CO 80537-5655, (970) 669-7672; www.interweave.com

#### **BOOK REVIEW:**

#### Enchanted Adornments: Creating Mixed-Media Jewelry with Metal, Clay, Wire, Resin & More

by Cynthia Thornton

Part fantasy fiction, part project guide, Enchanted Adornments (Interweave Press, 2009) combines author Cynthia Thornton's interests in mixed media jewelry design and folk stories. "Presented like an artist's sketchbook," she explains, "it is full of my own drawings, paintings, an original short story, and photographs to inspire and guide you on your Icreativel journey" (page 7).



Thornton begins with a refresher on design concept and the basic techniques employed by the projects in the book, including wire working, molding polymer and precious metal clays, carving and texturing the pieces, and setting stones. Readers are referred back to these pages from the projects that require those techniques.

Then the story begins: A jeweler is commissioned by a mysterious woman to create 20 gifts for a group of mystical beings, with the proviso that each piece be as magical as the beings for which they are being created. Each installment of the story, in which the jeweler meets one of the beings, is followed by step-by-step instructions for recreating the ring, pendant, necklace or bracelet she designs for each. Sketches suggest designs for the components, but only the finished projects, not the steps, are pictured.

The 160-page book features color photographs and watercolor illustrations throughout. End materials include a Troubleshooting section that describes the solutions to common problems with the materials used, a list of Resources, and an Inspiration Gallery of other artists' work. The book retails for \$24.95.

-Lynn Varon

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#### Museums Receive Fine Gem Donations

D. Sarros Gems Ltd., a wholesale dealer of fine gemstones, has donated a selection of fine gemstones to two different U.S. museums. A 46.16-carat barrel-cut peridot was presented to the National Museum in Washington D.C. and six tourmalines were donated to the Cincinnati Museum Center in Cincinnati, Ohio.

The gems were donated in memory of Mark P. Herschede Jr., a Graduate Gemologist, a renowned gemstone dealer and

collector, who died in June 2006. D. Sarros Gems recently acquired the gemstone inventory from Herschede's estate. According to co-owner Daniel Sarros, "Mark was a driving force behind the marketing and sale of chrome tourmaline in this country."

"The stones are exquisite and most are of the finest quality" said David Villwock, coowner of D. Sarros Gems. "We have heard many stories about the collection, and can't help but wonder what the stones themselves would say if only they could talk."

"Mark's appreciation of color was reflected throughout his inventory and collection," Sarros said.

Herschede was born in Cincinnati and was the owner of Turmali & Herschede Inc. in Sanibel, Florida. "The tourmalines donated to the Cincinnati Museum Center will allow his legacy and passion to be shared with many generations to come," Sarros explained. "Considering the quantity and quality of the tourmalines we have, we knew that we had to donate some to his home town museum."

The six gems going to the Cincinnati Museum Center are a 5.58-carat fantasy-cut carved green tourmaline, a 14.06-carat oval-cut light-green tourmaline, a 2.12-carat fancy-cut chrome tourmaline, a 3.54-carat slanted square-cut bicolor tourmaline, a 11.51-carat emerald-cut indicolite (blue tourmaline), and a 7.75-carat marquise-shape rubellite (red tourmaline).

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#### **Reader Alert:**

After this issue went to press,
Rock & Gem learned that
Weyerhaeuser Timber has
closed the Lucas Creek
collecting area to rockhounding.
Readers should always research
the land status of any collecting
site before traveling there.



# Lucas Creek CARNELIAN

## Collecting Orange Chalcedony in Washington

Story and Photos by Stuart "Tate" Wilson

ollecting carnelian along Lucas Creek in northwest Washington is a wonderful activity for anybody, anytime. I have had so much fun here, and I know you will, too. After one trip to this locality, I believe you will know why. For over six decades, rock clubs and the general public have frequented this location in search of semiprecious gemstones. The land is owned by Weyerhaeuser Timber, which owns most of the timber land in our state. The company does not require permits for general recreation use of its land, including rockhounding. It actually encourages us all to use its land to establish good relations with the public.



This handful of carnelian specimens is typical of what you can expect to find at Lucas Creek.



One collector uses his Lucas Creek carnelian finds to create stunningly attractive, yet useful, arrowheads.

I can still remember the first time I visited Lucas Creek, which was also my first rock hunt. I had seen my friend's collection and asked him to take me to where he finds those beautiful orange and red stones. When we arrived at Lucas Creek, I was told to just look anywhere, and so I did. Walking up a hill where the trees had been clear-cut, I noticed my first piece of carnelian sticking out of the dirt. When I picked it up, I was amazed at what I had in my hand. To this day, that stone is the best carnelian agate I have found, and I've never stopped rockhounding.

At this amazing spot, you can look for carnelian, agate, jasper, and petrified wood, and you may even find an arrowhead! Carnelian is a cryptocrystalline form of silicon dioxide, also called chalcedony. It is made of many microscopic crystals instead of one big single crystal. Carnelian occurs in colors from yellowish to dark red due to impurities of iron oxide.



Carnelian agates come in many beautiful colors, from rich red to a bright yellow.

Agates, which are also found at Lucas Creek, have beautiful banding patterns and can be found with the translucent colors of carnelian mixed in. Every piece picked up will vary in its makeup. It may be hard to identify any single stone as carnelian, agate or jasper; these stones may be made up of an infinite variation of all three. Carnelian is formed when water rich in silica slowly

seeps deep into the earth and fills vesicles. The silica hardens into a translucent semiprecious gem of fairly uniform color. This process happens over thousands of years. Agates are

created the same way, but the silica settles in layers, each layer colored by a slightly different mixture of impurities. That is how the different colored bands are formed.

The Lucas Creek area is rich in scenery and history. This area was an ideal place for Native Americans to reside many years ago. One look around and you'll know why; the forest is beautiful and full of animals, the water is peaceful, fish are plentiful in the river, and the air is crisp and fresh. During the summer, there are always blackberries that you can stop and eat while scanning the ground for carnelian.

Collecting here is good while the creek is low, from spring until fall. If you do not feel like getting your feet wet, you can go up into the hills and find carnelian, too. Lucas Creek is wonderful for kids, as well. They will not be bored with all the cool rocks there are to find, and they will have a great time playing in the water. The collecting is easy for people of any age or body type. Occasionally, there are other collectors there for you to stop and talk with and maybe hunt with.

To get to this wonderful spot from Seattle, Washington, take Interstate 5 south to state Route 508 (Exit 71), about 38 miles south of Olympia. Head east on state Route 508 for 2.4 miles to Jackson Highway. Turn left and continue along for 1.8 miles. There is a little convenience store at this point, so make sure and stop for any last minute snacks or help with directions! When you leave the store, take a right onto North Fork Road for another 4.9 miles.

Finally, turn right onto Lucas Creek Road and continue for 4.1 miles. The pavement ends at a "primitive road" sign and it turns into a gravel road. The gravel road continues on for 1.5 miles, and anywhere along this road is great for collecting.

Wherever you see a stream, you can stop and look. In the gravel bars, there are many pieces of carnelian waiting for you to push aside the ordinary rocks and expose them! When it is a hot summer day, cooling off in the refreshing creek may be more desirable. Just walk along in the shallow creek, and glowing chunks of carnelian will stand out amongst all the other rocks. You may



Anywhere along the gravel portion of Lucas Creek Road is great for collecting.

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#### Lucas Creek CARNELIAN from page 47



My first time at Lucas Creek, I found this wonderful agate after only a few minutes of searching!

also find carnelian in the side banks of the creek; however, these pieces are covered in dirt and need to be washed off before you know what you really have.

If it's a cool day and you don't want to be near the creek, that's OK. Just head up into the hills. You can sit on the ground with a hand shovel and scrape away the dirt, layer by layer. Your hand shovel will make a clinking sound when it hits a stone, and just about every stone you hit will be a piece of carnelian. This is a great way to find the big pieces that have been hiding underground, where no one has had the chance to look for them. Some days, I just want to walk through the woods without digging or wading in the water, and in the woods, as well, I will discover carnelian just sitting there on the surface.

One experience at Lucas Creek really stands out in my mind. There was an area that had recently been clear-cut and I was the first person to have access to it afterward. I was afraid to go alone, however, imagining that a bear, angered by the fact his home was just demolished, might attack me, so I asked my sister, who had never been on a rock hunt, to go with me.

We entered the remaining forest bordering the clear-cut and we were both having a great time on our hands and knees finding large pieces of carnelian and agate, one after another. Suddenly, we were snapped out of our zone as the strong wind cracked a giant tree. It crash to the earth 20 feet away from me, shaking the ground and making my heart skip a beat! The adventure was not over yet. A little while later, I was scooting along a fallen log, looking in the stream below for stones, not paying attention to what was in front of me. I looked up to discover I was face to face with a giant hornet's nest hanging off a branch. I quickly backed up and got out of there! Still later in the day, I heard my sister yell my name and I ran to find her. I found her holding up a giant, blood-red piece of carnelian weighing over 10 pounds. Like me, my sister had great beginner's luck!

When I first visited Lucas Creek, I noticed a man parked in his old, red Ford truck. At first, I didn't think much of it. The next time I came here. I noticed him again. Wondering whether he was also there for the gems, I stopped and talked to him. I found out my new friend's name was Doug and that he has been collecting a wealth of carnelian in this spot for over 20 years!

In the beginning, Doug started looking in the Newakum River, downstream from Lucas Creek. As the years progressed, he slowly worked his way up and now is settled right here in the hills surrounding Lucas Creek. Doug took me around to the back of his truck to show me some of his finds from the past year. Reaching into the bed of his truck, he pulled out a giant, completely intact orange carnelian twice the size of my head! He reached back into his truck again and pulled out yet another giant carnelian, then another! I had never seen anything like this. I highly recommend that visitors stopping by this area talk with Doug if they see him.

Over the past 20 years, Doug has amassed a collection of carnelian so large he keeps it locked up in a storage unit in 5-gallon buckets stacked from front to back and from floor to ceiling!

After you collect, go home and wash away any dirt that may remain on the stones you have found. Think of what you can do with all these beautiful stones. Have you already explored the wide world of lapidary? Maybe you're a jewelry maker and are looking for the perfect stone to set into a ring. The possible uses for this semiprecious gem are endless. The thing about these stones is that light goes through them in a wonderful way. Sitting on your windowsill, they will attract attention from anyone who enters the room.

Find a large stone, cut it in half, give it a polish, and now you have a paperweight. If you have a cabbing unit, you can make beautiful cabochons with carnelian. If you have a rock tumbler, throw some small pieces of carnelian in there and you will have some wonderfully polished good luck stones. My favorite thing to do with carnelian is to drill holes through many pieces using a drill press fitted with a diamond bit. Then I put them into the tumbler, and the results are gorgeously crafted beads for necklaces and bracelets. For all the gardeners out there, carnelian makes wonderful garden rocks. When it rains, these stones will glow and shine, lighting up your gar-



The beautiful colors and patterns in Lucas Creek carnelian show up brilliantly when light passes through the specimens.

den. Perhaps the best thing you could possibly do with any stone you find is to give it away as a gift. Not only is it a great act of kindness, but it will open up the world of rockhounding to other people who may not have been interested otherwise.

After you leave Lucas Creek, I would recommend you turn right onto lackson Highway from North Fork Road. This will take you into the small town of Chehalis. Stop at the Lewis County Historic Museum, housed in the old Northern Pacific Railway Depot, built in 1912, located at 599 N.W. Front Way St. The Lewis County Historical Society runs this museum. Not only are the staff very friendly, they are very helpful in conveying to you how this area was in the past. The admission is free and once inside, you can view many marvelous displays of relics from the past. They also have fine examples of minerals from this region.

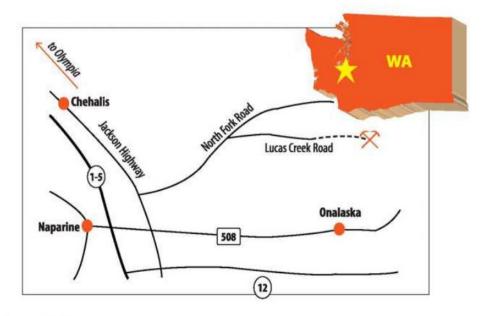
What I found to be of great interest are the displays depicting how Native Americans lived in this region. Fully intact arrowheads, tools, weapons, clothing and toys are beautifully displayed. Walking through the old railway station, you will see the past come alive in thousands of photographs of the inhabitants from a time not forgotten. For more information on this museum, visit its Web site, www.lewiscounty museum.org.

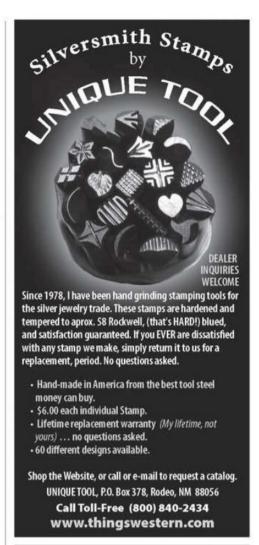
If you are interested in visiting the Lucas Creek collecting area with a group instead of by yourself, you may want to contact one of the many local rockhound clubs that occasionally take field trips to this location. It is a great way to

meet new people who are also interested in minerals and rockhounding. It is also a good way to learn of new localities for your favorite minerals. I belong to the Washington Agate & Mineral Society (WAMS), one of the oldest clubs in Washington State, founded in 1937. We meet in Olympia, which is a half hour north of Chehalis. Our Web site is www.wams.hostwq.net, or you may find a complete list of the rock clubs in Washington State at www.mineralcouncil.org/club.htm.

After a long day of searching and collecting carnelian at Lucas Creek you are not going to want to leave. Do not worry! This location will always be here, and it is open for all, anytime of the year. For centuries Native Americans have called this location their home, and for centuries to come, this area will continue to be held in high regard for its many treasures. Treat Lucas Creek with respect so that we can continue to enjoy it and future generations may do the same. Next time I visit Lucas Creek, I hope to see you there!

If you have questions about collecting at Lucas Creek, contact Weyerhaeuser Timber at (360) 446-3870 (local) or (800) 525-5440 (toll free).







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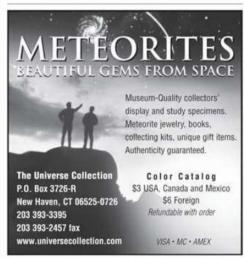
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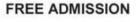
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#### Show Dates from page 33

#### **APRIL 2010**

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-LINCOLN, NEBRASKA: Show, "Gems Galore and More!"; Lincoln Gem & Mineral Club; Lancaster Event Center, 4100 N. 84th St.: Sat. 9-7, Sun. 9-5; adults \$5, children under 12 free; local special displays, exhibits, minerals, rocks, gemstones, beads, jewelry, demonstrations, dealers, youth activities; contact Charles Wooldridge, Lincoln Gem & Mineral Club. P.O. Box 5342, Lincoln, NE 68505, (402) 416-3233; e-mail: lgmcsecretary@yahoo.com; Web site: www. lincolngemmineralclub.org

9-11-ABBOTSFORD, BRITISH COLUMBIA, CANADA: Show; Ag-Rec Bldg., CFV Fairgrounds, 32470 Haida Dr.; Fri. 10-8, Sat. 10-6, Sun. 10-6; adults \$6, students (6-17) \$2, children under 6 free with adult; more than 35 dealers, beads, crystals, minerals, gifts, lapidary supplies, club displays, demonstrations, grab bags, children's creative workshop, gold panning, door prizes; contact Jennifer Moore, (604) 328-9766; e-mail: jenmac02@telus.net

9-11—ALBUQUERQUE, NEW MEXICO: 41st annual show, "Treasures of the Earth"; Albuquerque Gem & Mineral Club; Creative Arts Center, New Mexico State Fairgrounds (Expo NM), San Pedro entrance, across the street from the Lujan Bldg.; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$1 Fri., \$3 Sat. and Sun., children under 13 free; more than 40 dealers, displays, door prizes, kids' booth, silent auctions, faceting demonstrations, gold panning, gem setting, free mineral/gem identification; contact Paul Hlava, (505) 255-5478; e-mail: hpf5@qwest.net

9-11-EUREKA, CALIFORNIA: 9th annual show, "Lost Coast Jewelry, Gem, Bead & Mineral Show"; Kasey Enterprises; Redwood Acres Fairgrounds, 3750 Harris St.; Fri. 12-7, Sat. 10-7, Sun. 10-5; adults \$3, students and seniors \$1.50, children free; minerals, gemstones, crystals, beads, pearls, gold nuggets, fine jewelry, gold, quartz, fossils, tools, door prizes; contact Diana, Kasey Enterprises, P.O. Box 2927, McKinleyville, CA 95519, (707) 839-1358; e-mail: kaseyent@sbcglobal.net

9-11—OGDEN, UTAH: 59th annual show, "2010 Gemstone Junction"; Golden Spike Gem & Mineral Society; Golden Spike Event Center, Weber County Fairgrounds, 1000 N 1200 W; adults \$2, students \$1.50, children under 12 free with adult; Fri. 9-6, Sat. 10-6, Sun. 10-4; more than 25 dealers, more than 30 display cases, geodes, faceted stones, dinosaur bones, fossils, minerals, beads, jewelry, healing stones and crystals, petrified wood, lapidary tools and equipment, demonstrations, rock bags, Wheel of Fortune, door prizes, silent auction; contact Cindy Aeschlimann, P.O. Box 12835, Ogden, UT 84412-2835, (801) 648-5060; e-mail: club@goldenspikegem.org; Web site: www.golden spikegem.org

9-11—ST. PETERSBURG, FLORIDA: Show; Frank Cox Productions; The Coliseum, 535 4th Ave. N; Fri. 10-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203, Sarasota, FL 34236, (941) 954-0202; e-mail: frankcox@comcast.net; Web site: www.frankcoxproductions.com

9-11-TACOMA, WASHINGTON: Show, "Gem Faire"; Gem Faire Inc.; Tacoma Dome/Exhibition Hall, 2727 E. "D" St.; 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

10-11-BELLINGHAM, WASHINGTON: 49th show; Mt. Baker Rock & Gem Club; Bloedel-Donovan Park, 2214 Electric Ave.; free admission; Sat. 10-6, Sun. 10-5; rocks, fossils, gems, jewelry, dealers, door prizes, club sales, silent auction, raffle, demonstrations, exhibits, special kids' activities; contact Candi Gerard, (360) 384-3187

10-11—CANTON, ILLINOIS: 50th annual show; Fulton County Rockhounders; Wallace Park; Sat. 10-6, Sun. 10-5; free admission; contact Steven Holley, (309) 231-8861; e-mail: ilfossil@hotmail.com; or George Coursey, (309) 368-2947; e-mail: courseyfarms@hughes.net

10-11-DES PLAINES, ILLINOIS: 45th annual show; Des Plaines Valley Geological Society; Des Plaines Park District Leisure Center, 2222 Birch St. (just west of River Rd. off Touhy); Sat. 9:30-5, Sun. 10-4; adults \$3, students \$1 with school ID, seniors \$2, children under 12 free with adult; educational exhibits, live demonstrations, kids' room, silent auction, dealers, raffles, door prizes; contact Lois Zima or Jeanine Mielecki; (847) 298-4653; e-mail: jaynine9@aol. com; Web site: www.desplainesgeologyclub.org

continued on page 64

# ----2010 Lapidary Article of Year Contest

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#### **OFFICIAL CONTEST RULES**

#### WHO IS ELIGIBLE

U.S. residents only, age 18 and older.

#### **HOW TO ENTER**

Submit a step-by-step lapidary project article to *Rock & Gem*. For submission guidelines, visit www.rockngem. com/submissions.asp or write to *Rock & Gem* Writers' Guidelines, P.O. Box 6925, Ventura, CA 93006-9899.

"Lapidary" is defined as the working of precious or semiprecious gem materials or metals into an ornament to be worn or decoratively displayed. Howto stories dealing with the building of lapidary tools, display paraphernalia, and other items are welcome, but are not eligible for the contest.

Authors must complete and return a Contributor Agreement and W-9 form before their entry will be considered for publication. Contact Managing Editor Lynn Varon at (805) 644-3824 ext. 129 or editor@rockngem.com for these forms.

All conditions and requirements of the writers' guidelines and the Contributor Agreement apply.

All step-by-step lapidary projects published in 2010 cover date issues of Rock & Gem are eligible for the 2010 contest, regardless of the year of submission, and will be automatically judged.

The number of lapidary project submissions received may exceed the available space. *Rock & Gem* publishes approximately 6 to 12 project article per year.

The authors of all published articles will receive normal payment for the article, as determined by the editor.

If a winning entry was contributed by a separate author and photographer or by multiple authors, one prize will be awarded to the contributors, to be divided as they see fit.

#### **JUDGING**

Articles will be judged by a combination of reader response and editorial merit. Readers should send abrief explanation of why a project deserves the big prize to 2008 Lapidary Article of the Year Contest, Rock & Gem magazine, 290 Maple Ct., Ste. 232, Ventura, CA 93003 or to editor@rockngem.com.

Don't wait to send in your vote! The deadline for 2010 votes is January 1, 2011. The winner will be notified by January 17, 2011. Readers may vote for more than one article per year, but are limited to one vote per article.

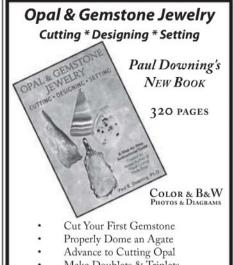
The final decision will be made by the Managing Editor of Rock & Gem.

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#### Tourmaline

ourmaline is a very important gemstone I in the colored stone market and is available in many different natural colors, including high-end red (rubelite), pastel pink, green, blue, and many other colors. Green tourmaline was discovered in Brazil by the Spanish around 1500. Gem identification was not very sophisticated then, and if a stone was green, it was simply called an emerald. Blue stones were thought to be sapphire and red stones were all thought to be rubies. By the 1800s scientists had more knowledge and identified tourmaline as a distinct mineral species.

The name tourmaline comes from toromalli, the Sinhalese word for mixed gems. It's a term the Dutch applied to gem gravels containing multiple gems species found in Ceylon, which is now known as Sri Lanka. Tourmaline, like garnet, is a group of closely related minerals species that share the same crystal structure but have slight differences in their chemical and physical properties. Tourmalines all contain a mixture of aluminum, boron and fluorine, plus a variety of elemental impurities, including sodium, lithium, calcium, magnesium, manganese, titanium, copper and iron. The primary tourmaline species are elbaite, liddicoatite, dravite, uvite and schorl. Most gem tourmalines are elbaites, and offer a wide range of colors.

Tourmaline is found in pegmatites in which lithium and sodium are concentrated and in alluvial deposits as water worn pebbles. Color zoning sometimes occurs in tourmaline causing a bicolor or multicolor effect. Some crystals have a core of one color (pink) and an outer layer of another color (green) and are referred to as "watermelon tourmaline" One of my favorite tourmaline types is chrome tourmaline, which is colored a vibrant green by traces of vanadium or chromium or both. In some cases, jewelers can use a tourmaline crystal just as it comes from the earth to make a unique piece of jewelry, and other times faceters will cut natural crystals into long, rectangular gems to reduce waste. Waterworn pieces can be cut into a variety of shapes, including rounds and cushions, depending on their natural shape.

The world's largest producer of gem tourmaline is the Brazilian state of Minas Gerais, although there are hundreds of mines in other parts of Brazil that have been huge producers, as well. The African countries of Nigeria, Zambia, Mozambique, Madagascar, Namibia, Tanzania and Kenya are also well known for tourmaline. Asian sources



of gem tourmaline include Afghanistan, Pakistan and Russia. The United States also has some well-known tourmaline producing areas, including Maine and California.

Tourmaline is a terrific stone for faceters to cut as it usually polishes easily using aluminum oxide or diamond. However, it also can cause difficulties for those who are not familiar with buying rough tourmaline. The gem often has what is called a closed C-axis that will cause faceted green stones to appear black. An open C-axis is desirable in faceting rough. To identify an open C-axis, shine a flashlight down one end of the length of the crystal and look at the opposite end. If you can see the light shining through the length of the crystal, the C-axis is open. If the crystal does not transmit the light, its C-axis is closed and the stone is not ideal for faceting.

Tourmaline has a refractive index of approximately 1.62 and a critical angle of approximately 38.12 degrees; therefore, I usually use a minimum pavilion angle of 40 degrees when cutting tourmaline. At present, tourmaline is plentiful on the market in most colors, although I haven't seen a lot of good rubelite in several years. There does seem to be some concern about treated tourmalines on the market, especially blue indicolite, which is often heat treated or infused with beryllium to change less desirable shades into fine blue. Detection of treatment, however, generally requires sophisticated analysis in a gem laboratory. Reputable sellers should provide buyers with documentation that states whether or not their gem rough has been treated.

Send your comments and questions about any of my columns to Off the Dop, P.O. Box 1041, Medina, OH 44258, or e-mail me at jimperkins@zoom internet.net.





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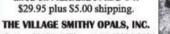
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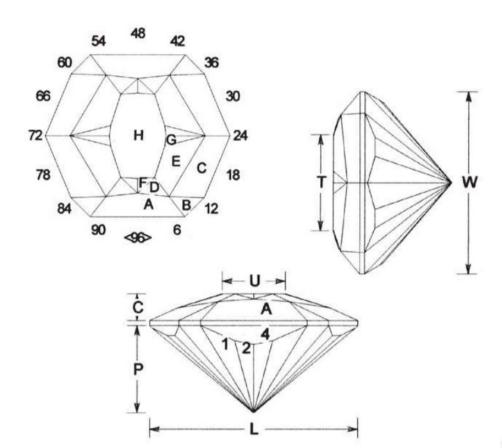
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Faceters are welcome to submit their original designs for publication. Mail materials to Many Facets Submissions, *Rock & Gem* magazine, 290 Maple Ct., Ste. 232, Ventura, CA 93003.

Here's a design with a somewhat different shape. I cut this in CZ, but raytracing suggests bright, lively stones will result when this design is used with any higher-refractive index materials from 1.72 up, with no angle changes.

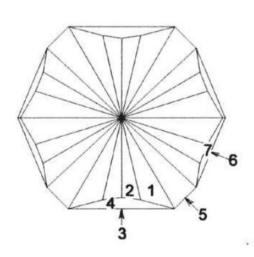
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4	58.80°	96-48	Level girdle
5	90.00°	12-36-60-84	MP @ 1,3,4
5 6	90.00°	18-30-66-78	MP @ 1,5
7	58.80°	18-30-66-78	Level girdle
CRC	WN		
Α	39.00°	96-48	Establish girdle height
В	33.30°	12-36-60-84	Level girdle
C	27.00°	18-30-66-78	Level girdle
D	18.80°	02-46-50-94	MP @ A,B,C
E	19.00°	19-29-67-77	MP @ A,B,C,D
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## Zuni Mountains FLUORITE

## Former Mines Offer Excellent Opportunities for Collecting

Story and Photos by Robert Beard

ew Mexico is one of the best states for mineral collecting because its wide variety of geologic terrain signals the presence of many different minerals. Many parts of the state are covered with vast deposits of relatively barren sediments and recent volcanic flows, however, so you have to know precisely where to look if you are going mineral collecting.

One of the most traveled highways in New Mexico is Interstate 40, which is the main interstate across the north-central part of the state, passing through Albuquerque on its way from Texas to Arizona. To the casual observer, the high-desert landscape it traverses often seems bleak, and there are relatively few road cuts.





These fluorite cubes were found on the surface of a dump at the Section 21 mines.

The Zuni Mountains, which are just southwest of Grants, New Mexico, are easy to miss as you drive west from Albuquerque along I-40. These mountains are quite different from many of the other mountain ranges in New Mexico; they do not have rugged peaks, but broad plateaus, cliffs and canyons. From I-40, it is hard to tell that you are passing a mountain range.

The Zuni Mountains are approximately 60 miles long and 40 miles wide, and form a broad southeast-northwest-trending uplift. The core of the mountains is Precambrian granite and metamorphic rocks. The flanks are late Paleozoic and Mesozoic sediments, and much of the southeast sides of the range are overlain by Tertiary and more recent volcanic rocks. The Zuni Mountains and surrounding area have been mined for copper, coal, uranium and fluorite.

Coronado and his army came through the region around 1540 in their quest for the Seven Cities of Cibola, often referred to as the Seven Cities of Gold. Ironically, he came to one of the parts of New Mexico that has virtually no gold. Although most of the Zuni Mountains are in what is now Cibola County, there were no gold cities, gold men, or gold deposits to be found.

The area remained relatively quiet for the next few hundred years with respect to mining. Prospectors in the late 1800s combed the Zunis for gold and silver, but by the early 1900s the area was a mineral wasteland compared to the rest of New Mexico. The largest city in the area, Grants, remained a minor railroad station and a town of cattlemen and sheepherders.

A small amount of copper had been mined from the Zuni Mountains, but it was insignificant when compared to the other copper deposits in New Mexico. In 1908, however, outcrops of fluorite were discovered near Mount Sedgwick in the eastern Zuni Mountains. Fluorite had not yet become an important industrial mineral, so the deposits remained undeveloped until the first fluorite was shipped from the district in 1937. The district was most active from 1943-53, when fluorspar



Collectors can easily find cubes and massive fluorite on the surface of the dumps of the Section 21 mines.

was used to supply the war effort and the post-war boom in manufacturing. Fluor-spar was shipped to a flotation plant in Los Lunas, New Mexico, but cheaper imported fluorspar soon made the deposits uneconomical, and the mines quickly closed. The mine dumps and some of the building foundations are all that remain of this short-lived industry.

Although fluorite is no longer mined in the Zunis, the former mines offer excellent opportunities for fluorite collecting. The best collecting I have found in the Zunis is at the Section 21/28 mines and the Mirabel Mine (see Author's Note). The Section 21/28 mines are named for their locations in Section 21 and Section 28, T9N, R11W, and the Mirabel is named for a former mine owner. The mines are located within the Cibola National Forest, Mount Taylor Ranger District. A review of claims on the U.S. Bureau of Land Management (BLM) mining claim database (www.geocommuni cator.gov), which includes all mining claims on U.S. Forest Service land, as well as BLM land, indicated no active claims in the area of the mines at the time this article was prepared. The Section 21/28 mines and the Mirabel Mine can be visited in one long day trip, but it is better to make it a twoday trip, if possible.

I used a mineral collecting guide from the New Mexico Bureau of Mines & Geology (NMBM&G) as my guide to fluorite collecting in the Zunis. I picked up my original copy in the early 1990s directly from the Bureau. The publication can now be accessed online (http://geoinfo.nmt.edu/publications/fieldguides/rockhound/Rock hound\_Guide\_3-22-04.pdf).

AUTHOR'S NOTE: Much to my shock and frustration, I learned on Oct. 13, 2009 that the Forest Service has closed the Mirabel Mine site to access, at least until Mar. 31, 2011 or until the order is rescinded (www. fs.fed.us/r3/cibola/conditions/closures\_re strictions/mt\_taylor/order\_no\_03-0272. pdf). These restrictions were put in place after I was at the mine in 2008.



This aggregate of nice fluorite cubes was found in the roadbed leading to the Section 21 mines.

I first visited the mines in April 1994 and found lots of great fluorite, but I was ill-equipped, as I only had a two-wheel-drive vehicle and the roads were in poor condition. My second trip was in November 2008, and this time I came with a four-wheel-drive vehicle, new maps, and my GPS.

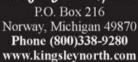
I started with a visit to what I thought was the Section 21 Mine, as this was the mine closest to state Route 53 and the same place I had visited in 1994. Using the guide from the NMBM&G, it seemed relatively easy to find. I had to open a gate over a former cattle guard before driving up the road to the mine. The road soon became a little rough, so I decided to park the car in a flat area and walk to the mine.

It was a very easy walk, and within about 10 minutes I was at a mine site. The mine has some large trenches, some old mining timbers, sections of wire mesh covering some of the openings, and a sign that warns about entering the underground workings. It is not just a single mine, but a series of workings that extends southwest to northeast. I found lots of great fluorite on the dumps, some of which was golden cubes. I broke open many of the larger pieces I found on the dumps, and these had cores of deep green fluorite. I also occasionally found some purple sections.

Later that day, I went to the Mirabel Mine. Although it was a dry day, the roads were often very muddy, and I had trouble going through some of the larger puddles with my four-wheel-drive vehicle. If I'd had









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#### Zuni Mountains FLUORITE from page 59



Deep cuts into the granite host rock were made to extract near-surface fluorite at the Section 28 mines.

a two-wheel-drive vehicle, my trip would have ended right there.

The Mirabel Mine is somewhat hard to find, as it is hidden in the woods, but you can see the dumps from the road, and it is on the east side of Diener Canyon. Unfortunately, I had arrived near the end of the day, and twilight further obscured the mine from the road. The Mirabel Mine has a small adit, and a large amount of waste rock is on the hillside.

The mineralization at the Mirabel was much different than that at the previous mine. While the first mine I visited had clear, yellow, green and purple fluorite, the mineralization at the Mirabel Mine consisted of massive green and white fluorite with white and tan bladed barite crystals. I found some void spaces with small cubes, but most of the fluorite was massive. It was easy to find large sections of vein material and, when broken, the fresh surfaces revealed light-green fluorite. The bladed barite crystals were a bonus, as they provided a nice contrast to the green fluorite.

After my 2008 trip, I checked my GPS coordinates, and to my dismay I found that, while I had indeed found the Mirabel Mine, I had not been at the Section 21 Mine. I was actually at a much smaller mine site to the south in Section 28. I had taken a road that was just southeast of the road to the Section 21 Mine. I knew then that I had to go back, as the real Section 21 Mine site appeared to be much bigger.

Fortunately, my family and I were in New Mexico in August 2009, and we had the opportunity to visit the Zunis. I thought it would be a cinch to find the right site and get to the Section 21 Mine. We came to Grants late in the afternoon and drove down state Route 53 to what I thought was the right road. We passed through a gate and drove to the northeast and soon came to an area that appeared to be mine dumps, but it was a dry water impoundment. We came across a father and son who were four-wheeling in their jeep, and the man said that the mines were not on this road, but on the road to the southeast. Once again, it appeared that I had taken



Golden aggregates of fluorite cubes can be found on the dumps of the Section 28 mines.

the wrong road. At first, I thought the man was referring to the small prospects in Section 28 that I had seen during my previous trip, as I was still convinced we were on the correct road. However, it soon became apparent that we were not going to find any mines on this road. By then it was too dark to check the other road.

We stayed in Grants that evening and decided to give it one more shot the following morning. On our way to the mines, we stopped at the Malpais Information Center, which is operated by the U.S. Forest Service. It is on the south side of state Route 53, just west of the road to the Section 21 Mine. When I asked about the fluorite mines, the Forest Service employee behind the counter said, "Oh no, you cannot get to the mines. The roads are far too rough, and the hike is too strenuous. People only go to the mines if they have a guide."

Normally, this would have been discouraging, but the Information Center also had 7.5-minute USGS topographic maps for sale. The access road to the Section 21 mines is on the "Ice Caves" map, and most of the Section 21 mines are on the "Arrosa Ranch" map. As seems usual with us, the field trip we wanted to take required the purchase of multiple maps. The small prospects in Section 28 that I visited in 1994 and 2006 were not even shown on either map. Based on the maps, it seemed like the Section 21 Mine would be relatively easy to reach. The maps cost \$8 each, so I purchased both.

After we left the Information Center, we finally went to the Section 21 mines. Within approximately 500 feet of the gate, the road began to climb, and I switched to four-wheel drive. The road was a little rough, but our rented Dodge Nitro handled the road very easily. The road was steadily uphill, and we soon came to a very large mine dump on the southeast side of the road. There was nowhere to turn off, so we parked in the middle of the road to check the dump. It was mostly granitic waste rock with some green fluorite.

We continued up the road and soon came to some concrete foundations. This

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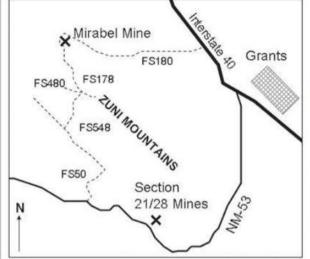
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#### Zuni Mountains FLUORITE from page 60





appeared to be the site of an old mill or other buildings. The road soon ended near the top of the ridge, and according to the map the road had indeed ended. We drove the car back down to the foundations and got out to explore the area.

There were several large piles of waste rock with fluorite, and we found a fairly large dump on the northwest side of the road. We did not find any open shafts or adits, but the area was quite disturbed. Fluorite was just about everywhere, and my son found an excellent group of cubes on one of the dumps. I also found a large piece of fluorite with excellent cubes by digging out exposed rocks along the roadbed.

We soon drove back down the road and came across mine workings on the southeast side of the road; there were also the wooden timbers of an old mine near the workings. I was surprised that we missed this earlier. This was by far the largest of the workings, and it had several nice pieces of dark green fluorite and some pieces with good cubes. It would have been very easy to spend several hours looking for the best fluorite here. A shovel and hand tools, which I understand are perfectly acceptable for collecting on Forest Service land, would have been very useful for digging into and expose more rocks in the dumps (see sidebar).

We found some very nice massive fluorite and cubes, and left far more than we took back at the dumps for future collectors. For reference, I collected the following coordinates in the field, and these were later checked using aerial photographs from Google Earth, which can be downloaded through www.google.com. All coordinates are referenced using the North American Datum 83 and World Geodetic System 84 (NAD83/WGS84) datum, and are in the degree-minutes-seconds format:

Section 21 mines

Gate next to state Route 53: 34° 58′ 54.9″N, 108° 00′ 45.4″W

Mine dump on east side of access road: 34° 59′ 13.8″N, 108° 00′ 13.7″W

Foundations near end of access road: 34° 59′ 22.4″N, 107° 59′ 56.1″W End of access road: 34° 59′ 29.2″N, 107° 59′ 55.4″W

#### Section 28 mines

Gate next to state Route 53: 34° 58′ 36.4″N. 108° 00′ 22.3″W

Parking area: 34° 58′ 50.3″N, 108° 00′ 8.8″W

Mine dump: 34° 59′ 1.4″N, 108° 00′ 9.8″W

#### Mirabel Mine (See Author's Note)

Close inspection of the Google Earth photos shows that the mines and prospects in Sections 21 and 28 have some very large trenches. The Section 21 mines, in particular, have a very large trench east-northeast of the concrete foundations that we did not see while at the site. The cuts shown in the aerial photographs appear to be much larger than what we observed at the mines. It could be interesting to take these aerial photographs into the field and find the trenches, as they might expose some large veins of fluorite.

While the Section 21 and Section 28 mines can easily be visited in a half-day trip, the Mirabel Mine is easily another half-day, and visiting both sites is a very long day. It is probably best to make these separate day trips if you have enough time. Four-wheel drive is preferable for all these sites, but if you have to, you can easily walk to the Section 21 and 28 mines. You may be able to access the Mirabel Mine parking area with a two-wheel-drive vehicle, but the access roads are often very muddy, particularly when coming from the south.

#### **GETTING THERE**

You should make sure that you have a good map for finding your way to these mines. As I learned from experience, it is very easy to take a wrong road in the Zunis, and it can be very difficult to get back on track. I highly recommend getting a copy of the Forest Service map "Cibola National Forest, Mt. Taylor Ranger District", especially if you plan to visit the Mirabel Mine.

The access road turn-off for the Section 21 mines is 21.3 miles south on state Route 53 from its intersection with Business I-40. The McDonald's restaurant here is a useful starting point, being one of the few semipermanent landmarks in a town. Take state Route 53 south 16.70 miles, and watch for the junction with Forest Service Road 447, which will be on your right (west). Continue on state Route 53 for another 4.6 miles and look for an unlocked green metal gate on your right (north). The asphalt pavement stops at this gate. Continue on the unpaved road approximately 1.5 miles to the Section 21 mines. You will see dumps and workings along the road.

To get to the Section 28 mines, return to state Route 53, turn left (east), and turn through the next gate on the left, which is approximately 0.2 miles east. Follow this road until you decide to park, then hike on the road directly to the Section 28 mines.

To get to the Mirabel Mine, return to state Highway 53 and the access gate to the Section 21 mines. Proceed 6.3 miles west to Forest Service Road 50 and take it to the junction with Forest Service Road 548. Bear right onto Forest Service Road 548 and continue north. Turn right (east) onto Forest Service Road 480, and shortly afterward (0.1 mile) turn left (north) onto Forest Service Road 178. Continue approximately 4.5 miles to the Mirabel Mine, which will be on the east side of Diener Canyon.

Alternately, if you just wanted to visit the Mirabel Mine from Grants, you can take Forest Service Road 180 to Forest Service Road 178, but this is best done by using the Forest Service map. Accessing the Mirabel Mine via Forest Service Road 180 may be the preferred route if you are dealing with snow or other wet weather.

You are guaranteed to find fluorite if you visit any of these mines. These sites do not require any significant hiking, providing you have a four-wheel-drive vehicle. All the mines offer excellent fluorite collecting for anyone visiting the Albuquerque area or for those passing through Grants on their way across New Mexico.

#### Contact Information

For details about acceptable collecting practices in this part of New Mexico, contact: Cibola Forest Service office 1800 Lobo Canyon Rd. Grants, NM 87020 (505) 287-8833 phone (505) 287-4924 fax

Web site: www.fs.fed.us/r3/cibola/districts/ mttaylor.shtml

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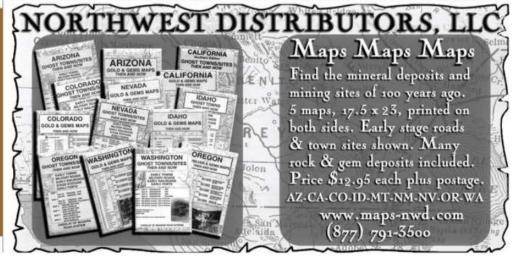
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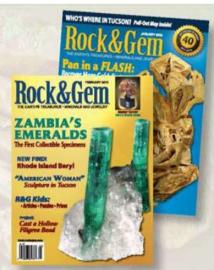
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#### Show Dates from page 50

#### **APRIL 2010**

10-11—GOODING, IDAHO: Annual show; Petrified Watermelon Pickers; Idaho State School for the Deaf and Bilnd, Recreation Gymnasium, 1450 Main St.; Sat. 9-5, Sun. 10-4; free admission; rock, dealers, jewelry, gemstones, door prizes, grab bags, silent auction, demonstrations, educational displays, club member specimens and lapidary demonstrations; contact Dixie Reale, P.O. Box 402, King Hill, ID 83633, (208) 293-4340; e-mail: dixiereale@mac.com; Web site: www.kountinghouse.com/club

10-11—GREEN BAY, WISCONSIN: Show, "Green Bay is Rockin' on the Fox"; Green Bay Neville Public Museum Geology Club; Neville Public Museum, 210 Museum Pl., downtown; Sat. 9-5, Sun. 10-4; adults \$2, children under 14 free; 14 dealers, fossils, minerals, gemstones, jewelry, free polished stones for children, grab bags, working and special exhibits, wire wrapping demonstrations; contact Randy Westberg, 1815 E. Shore Dr., Green Bay, WI 54302, (920) 619-6060; e-mall: randy.westberg@rhcogb.com

10-11—GRESHAM, OREGON: Show; Mount Hood Rock Club; Mount Hood Community College Gym, 26000 SE Stark (south end of the campus); Sat. 10-6, Sun. 10-5; contact Keene Clay, (503) 558-8500; e-mail; ODROC@commast net

10-11—JOHNSON CITY, NEW YORK: 41st annual show; New York Southern Tier Geology Club; Johnson City Senior Citizen Center, 30 Brocton St.; Sat. 9-6, Sun. 10-4; adults \$3, kids under 12 free; dealers, silent auctions; contact Al Conklin, 187 Forest Hill Rd., Apalachin, NY 13732, (607) 625-4140; e-mali: allanconklin@aol.com

10-11—KINGMAN, ARIZONA: Show, "Gems of Arizona"; Mohave County Gemstoners; Kingman Academy of Learning High School, 3420 N. Burbank St.; Sat. 9-5, Sun. 9-4; free admission; demonstrations (obsidian knapping, faceting, wire wrapping), mineral displays, silent auction, dealers, cash raffle, hourly door prizes, children's activities; contact Nan Russell, (928) 846-0927, or Donna Robinson, 3202 E. Leroy Ave., Kingman, AZ 86409, (928) 263-1480; e-mail: gemstoners@live.com; Web site: www.gemstoners.org

10-11—LANCASTER, CALIFORNIA: Show; Antelope Valley Gem & Mineral Club; Lancaster High School, 44701 32nd St. W, between Lancaster Blvd. and Ave. J; Sat. 9-5, Sun. 9-5; free admission; demonstrations, vendors, tailgaters, silent auction table, raffle drawing, games; contact Jules Ficke, 4233 W. Ave. L-4, Lancaster, CA 93536, (661) 943-5157; e-mall: av\_gem@yahoo.com; Web site: www. avgem.weebly.com

10-11—MARIPOSA, CALIFORNIA: 10th annual show; California State Mining and Mineral Museum, Mariposa Gem & Mineral Club, California State Mining and Mineral Museum Association; Mariposa County Fairgrounds, Hwy. 49; Sat. 10-6, Sun. 10-4; gems, minerals, crafts, speakers, mineral exhibits, educational activities, raffles, silent auctions; contact Dianne Vereschagin or Darci Moore, (209) 742-7625

10-11—PARIS, ONTARIO, CANADA: 38th annual show; Brantford Lapidary & Mineral Society; Paris Fairgrounds, 139 Silver St.; Sat. 10-5, Sun. 10-5; adults \$3, children 12 and under free; dealers, gems, minerals, fossils, stones, lapidary equipment and supplies, fine jewelry, supplies, beads, demonstrations, exhibits, silent auction, "Mine for Gems" display; contact Robert Parry, P.O. Box 29, 138 Sugar Maple Rd., St. George, ON NOE 1NO, (519) 448-1236; e-mail: robert @roberthalloriginals.com; Web site: www.brantford lapidarymineral.ca

10-11—POCATELLO, IDAHO: Show; SouthEast Idaho Gem & Mineral Club; Bannock County Fairgrounds, 10588 Fairgrounds Rd.; Sat. 10-6, Sun. 10-5; contact Martin Rakatansky, (208) 233-2538; e-mail: rak80@cableone.net

11-12—BLOOMINGTON (MINNEAPOLIS), MINNESOTA: Business-to-business gem trade show; Gem & Lapidary Wholesalers Inc.; Ramada Inn Mall of America and Convention Center, 2201 E. 78th St. (I-494 at 24th Ave. S. Exit); Sun. 11-6, Mon. 10-3; contact G&LW, P.O. Box 98, Flora, MS 39071-0098, (601) 879-8832; e-mail: info@glwshows.com; Web site: glwshows.com

16-18—ALPINE, TEXAS: Show, "Wonders from our desert and beyond": Chihuahuan Desert Gem & Mineral Club; Kokernot Lodge, Rte. 223 bypass; Fri. 9-6, Sat. 9-6, Sun. 11-5; free admission; Kids' Corner, door prize, dealer demonstrations, video "What's Hot in Tucson"; contact Mary Brogan, P.O. Box 1111, Alpine, TX 79831, (432) 837-3824; e-mail: marybrogan @rocketmail.com; Web site: www. agates123.com/cdgmc/

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16-18-RICKREALL, OREGON: Show, "Rocks of Oregon"; Willamette Agate & Mineral Society of Salem; Polk County Fairgrounds, 520 S. Pacific Hwy. W; Fri. 9-6, Sat. 10-6, Sun. 10-4:30; contact Kristi Edwards, 1236 SE Seaport Circle, Corvallis, OR 97333, (541) 738-6811; e-mail: edwardskk@

16-18-SAN JOSE, CALIFORNIA: Show, "The Art of Stone"; Santa Clara Valley Gem & Mineral Society; 344 Tully Rd.; Fri. 9-5, Sat. 10-5, Sun. 10-5; adults \$6, children under 12 free: dinosaur speaker, antique appraiser, kids' education program, demonstrators, flint knapping, fluorescent minerals, dealers, displays; contact Marc Mullaney, (408) 691-1584; e-mail: geologistm@aol.com; Web site: scvgms.org

16-18—SARASOTA, FLORIDA: Show; Frank Cox Productions; Municipal Auditorium, 801 N. Tamlami Trail (Hwy. 41); Fri. 10-5, Sat. 10-5, Sun. 10-5; gems, jewelry, beads; contact Frank Cox Productions, 755 S. Palm Ave. #203, Sarasota, FL 34236, (941) 954-0202; e-mail: frank cox@comcast.net: Web site: www.frankcoxproductions.com

17-NORTH LITTLE ROCK, ARKANSAS: Annual swap; Central Arkansas Gem, Mineral & Geology Society; Burns Park, Elder Johnson Pavilion, I-49 Exit 150, Military Dr.; Sat. 8-5; free admission; bring your own table or tallgate; contact Pat Kissire, 4900 Sparks Rd., Little Rock, AR 72210, (501) 821-2346; e-mail: pkissire@sbcglobal.net; Web site: www. centralarrockhound.org

17-18—DOTHAN, ALABAMA: 3rd annual show; Dothan Gem & Mineral Club; Westgate Park James Grant Center, 501 Recreation Rd.; Sat. 9-5, Sun. 10-4; free admission; door prizes, silent auction, jewelry, minerals, cutting rough, slabs, gem trees, tumbled stones, mineral displays, equipment demonstrations; contact Arnie Lambert, 920 Yorktown Rd., Dothan, AL 36301, (334) 792-7116; e-mail: arlambert@ comcast net

17-18-EAU CLAIRE, WISCONSIN: 47th annual show; Chippewa Valley Gem & Mineral Society; Eau Claire County Expo Center, Lorch Ave. (Hwy 93 and I-94); Sat. 9-5, Sun. 10-4; silent auction, minerals, fossils, crystals, gems, rocks, artifacts, jewelry, demonstrations, hands-on booth; contact Mike Schoenfess, (715) 456-0664

17-18—FREEPORT, NEW YORK: Show; Freeport Recreation Center; 130 E. Merrick Rd., Meadowbrook Pkwy. to exit M9 west (Merrick Road); Sat. 10-5, Sun. 10-5; adults \$5.50, children under 12 free with adult; dealers, minerals, gems, jewelry, fossils, beads, a goldsmith to set stones and do repairs, save 50 cents with this ad; contact Ralph Gose, P.O. Box 1418, Melville, NY 11747, (631) 271-8411; e-mail: kaleidoscopegemshows@yahoo.com

17-18-HELENA, MONTANA: 62nd annual show; Helena Mineral Society; Helena Civic Center, corner of Neill Ave. and Park Ave.; Sat. 9-6, Sun. 10-5; adults \$1, children 12 and under free with adult; more than 20 dealers, mineral specimens, equipment, jewelry, faceted gems, facet rough, fossils, beads, cabbing rough, fluorescent display, 20 display cases, children's garnet hunt, ball toss, grab bags, silent auction; contact Gary Parisi, P.O. Box 736, Helena, MT 59624, (406) 442-1226; e-mail: gjparisi72@yahoo.com; Web site: helenamineralsociety.org

17-18-IDAHO FALLS, IDAHO: 45th annual show; Idaho Falls Gem & Mineral Society; Idaho Falls Recreation Center, B St.; Sat. 10-6, Sun. 10-5; adults \$2, children under 12 free; contact Greg Hayes, (208) 521-8885

17-18—KENNEWICK, WASHINGTON: Annual show; Lakeside Gem & Mineral Club; Benton County Fairgrounds, 1500 S. Oak; Sat. 10-5, Sun. 10-4; contact Mickee Madden, (509) 582-8599; e-mail: Mickeemadden@charter.net

17-18—PITTSBURGH, PENNSYLVANIA: Show; Monongahela Rockhounds; West Mifflin Volunteer Fire Co. #4 Skyview Hall, 640 Noble Dr.; Sat. 10-6, Sun. 10-4; free admission; contact Bret Howard, (724) 327-8618; e-mail: show@monongahelarockhounds.org; Web site: www.monon

17-18—WALNUT CREEK, CALIFORNIA: Show, "Contra Costa Crystal Fair"; Pacific Crystal Guild; Civic Park Community Center, 1375 Civic Dr. at Broadway; Sat, 10-6, Sun. 10-4; admission \$6; contact Jerry Tomlinson, (415) 383-7837; e-mail: sfxtl@earthlink.net; Web site: www.crystal

continued on page 69

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#### **Index to Advertisers**

inaex to	A	avertisers	
Ackley's Rocks		Lapcraft, Inc	
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Bezel Form		Mineralab	
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		Miner's Keepers	
Capistrano Mining		Minertown	
J S Copti		Minnesota Lapidary Supply Corp	
Covington Engineering		Nature's Outback	
Crystal Cave		New Directions	
Crystal Grove		New Era Gems	
Deepak Gems		North Coast Faceting	
Demming Gem & Mineral Society, Inc		Northwest Distributors	
The Denver Coliseum Mineral, Fossil,	20	Oakrocks.net	45
Gem & Jewelry Show	21	On the Rocks Gems, Jewelry	12 22
Diamond Pacific Tool Corp.		& More, Inc	
Dragonsaye Auctions		Optima Gem	
Earthworks		Oxy Rocks	
Easy Steps Video		Phoenix Orion Gifts	
Ebersole Lapidary Supply, Inc.		Pickens Minerals	
Bill Egleston		Pioneer Gem Corp	
Eloxite Corp.		Polaris Tool & Machine	
Facet Shoppe		Pretty Rock	
Fac-Ette Manufacturing, Inc		Raytech Industries	
Fall Creek Rock Shop		Blaine Reed	
Fine Mineral Show		Research Unlimited	
Fire Mountain Gems		Richardson's Rock Ranch	
Fossil Expo XXXII		Rob's Rock Shop	
John E. Garsow Gems & Minerals	41	Rockaway Opals	
Gem & Lapidary Wholesalers, Inc	16	The Rock Peddler	
Gem Center USA Inc.		Rocks & Minerals	
Gem Faire, Inc	10	Ross Metals	
Gem-Fare	40	San Francisco Fine Mineral Show	
Gemological Institute of America	45	Sapphire Mining	
The Geode Gallery	69	Shipwreck Beads	
Geological Wonders	45	Snyder's Valley Springs Pow Wow	
Georgia Rock Shop	37	South Pacific Wholesale Co	
Gilman's	48	Joseph P. Stachura Co., Inc	
Great South Gem & Minerals, Inc	27	Stuart's Minerals	
William Holland School of Lapidary Arts	65	Super Agates	
Houston Fine Mineral Show	57	Sylmar Displays	
Hughes Associates	62	TFG Collector	
In A Flash Opal Inlay	53	Tagit	
Inland Lapidary	33, 69	Treasure Chest	
Imperial Manufacturing	54	Tru-Square Metal Products	
JS Gems Lapidary	55, 64	U.S. Geological Supply	
Jarvi Tool Co		Ultra Tec	
Jeanne's Rock & Jewelry	55	Unique Tool	
		The Universe Collection	49
Katy Rock Shop	45		
Katy Rock ShopKingsley North, Inc.		VR Gem Cutters	33
	7, 60		33
Kingsley North, Inc.	7, 60 54	VR Gem Cutters	33 31, 55
Kingsley North, Inc	7, 60 54 54	VR Gem Cutters The Village Smithy Opals, Inc	33 31, 55 54 45, 73

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#### **APRIL 2010**

17-18—YAKIMA, WASHINGTON: 49th annual show, "Parade of Gems"; Yakima Rock & Mineral Club; Central Washington State Fairgrounds, Modern Living Bldg., Fair Ave. and E. Nob Hill Blvd.; Sat. 10-6, Sun. 10-4; dealers, demonstrations, gold panning, silent auction, junior activities, grab bags, door prizes, raffle, Spin A Wheel; contact Marti Sondgeroth, (509) 248-6401 or (509) 910-3484; e-mail: marthams @q.net

23—WICHITA, KANSAS: Show; 57th annual show; Wichita Gem & Mineral Society; Cessna Activity Center, 2744 George Washington Blvd.; Frl. 9-7, Sat. 10-7, Sun. 10-5; adults \$5, children \$1; annual Rocky Mountain Federation meeting; contact Gene Maggard, 8318 S.E. Hwy. 77, Leon, KS 67074-9026, (316)742-3746

23-25—DECATUR, ILLINOIS: 58th annual show; Central Illinois Gern & Mineral Club; Macon County Fair Grounds, 3700 N. Westlawn Ave.; Fri. 11-6, Sat. 9-6, Sun. 10-4; adults \$5 (good all three days), seniors \$2, kids under 15 free; dealers, demonstrators, displays, Illinois DNR Oil & Gas Trailer, gernstones, fossils, jewelry, beads, minerals, findings, door prizes, kids' corner, "Running Water Sluice"; contact Tony Kapta, (309) 830-6516; e-mail: clgmc@comcast.net

23-25—DENVER, COLORADO: Spring show, "Colorado Mineral & Fossil Show"; Martin Zinn Expositions LLC; Holiday Inn — Denver Central, 4849 Bannock St.; free admission; 80 wholesale and retail dealers, minerals, fossils, gems, jewelry; Fri. 10-6, Sat. 10-6, Sun. 10-5; contact Martin Zinn Expositions, P.O. Box 665, Bernalillo, NM 87004-0665, fax (303) 223-3478; e-mail: mzexpos@aol.com; Web site: www.mzexpos.com

23-25—GRANTS PASS, OREGON: Show; Rogue Gem & Geology Club; Josephine County Fairgrounds, Redwood Hwy.; Fri. 9-5, Sat. 9-5, Sun. 9-4; adults \$1, children free; dealers, displays, demonstrations, door prizes, games, silent auction; contact Mary, P.O. Box 1224, Grants Pass, OR 97528, (541) 479-1045; e-mail: rockhoundclub@yahoo.com; Web site: www.roguegemandeeology.com

23-25—IRVINE, KENTUCKY: Show, "3rd annual Mountain Mushroom Festival Rock, Gem & Mineral Show"; City of Irvine, Mushroom Festival Committee, Blue Grass Gem & Mineral Club; Estill County School's Central Office, 253 Main St.; Fri. 9-3, Sat. 9-7, Sun. 10-5; free admission; Kentucky agate display, Kentucky agate, jewelry, fossil and mineral sales, Kentucky agate field trips Apr. 20-22, register online; contact Phil Daly, 10330 Forkland Rd., Parksville, KY 40464, (859) 854-0418; e-mail: phillipdaly@bellsouth.net; Web site: http://mountainmushroomfestival.org/

23-25—LINCOLNTON, GEORGIA: Graves Mountain Rock Swap and Dig; Junior Norman; Graves Mountain Mine; Frl. 8-6, Sat. 8-6, Sun. 8-6; admission by donation; collect from 8 am to 6 pm each day, sell and trade minerals; contact Junior Norman, (706) 401-3173; e-mail: rick@wncrocks.com; Web site: www.wncrocks.com/resources/Collecting%20sites.htm

23-25—SALT LAKE CITY, UTAH: Show, "Festival of Gems"; Wasatch Gem Society; Utah State Fair Park, 115 North 10th West, Zion Bidg.; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$2, children free; displays, lapidary demonstrations, grab bags, Wheel of Fortune, silent auction, door prizes, gem and mineral dealers; contact Jeff Huefner, (801) 467-6850; e-mail: WGSShow@gmail.com; Web site: wasatchgemsociety.com

23-25—SAN DIEGO, CALIFORNIA: Show, "Gem Faire"; Gem Faire Inc.; Scottish Rite Event Center, 1895 Camino del Rio S; Fri. 12-7, Sat. 10-6, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gem faire.com; Web site: www.gemfaire.com

24-25—CUYAHOGA FALLS, OHIO: Show, "Gemboree"; Akron Mineral Society & Summit Lapidary Club; Emidio & Sons Expo Center, 48 E. Bath Rd.; Sat. 10-6, Sun. 10-6; adults \$5, students and seniors \$4, children \$1; lapidary demonstrations, art and educational displays, gem identification, geode cracking, gem mine, make-and-take projects for children, dealers, door prizes, silent auction; contact Evelyn Tryon, 2028 Tallmadge Rd., Kent, OH 44240, (330) 673-9664; e-mail: etjrtryon@juno.com; Web site: www. LapidaryClubofOhlo.org

24-25—ELMA, WASHINGTON: Show, "Earth's Treasures"; Grays Harbor Gem & Geology Society; Gray's Harbor County Fairgrounds, 32 Elma-McCleary Rd.; Sat. 10-5, Sun. 10-5; contact Gary Emberly, 624 Fairmont Place, Aberdeen, WA 98520, (360) 533-6196; e-mail: Mellissa624@hotmail.com

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#### June Culp Zeitner

The rockhound hobby lost its "Mother Superior" the evening of Oct. 18, 2009, when June Culp Zeitner passed quietly to that Big Agate Dig in the Sky. June's contributions to our hobby are unrivalled. She wrote countless articles and several books about rocks, minerals, collecting and lapidary. If there is a rockhound who has not read at least some of June's contributions to the collecting literature, I'd be surprised.

Like so many of us, June got interested in rocks and minerals through someone elseher husband. She spent her entire adult life traveling around the United States, visiting collecting sites and writing about her adventures and observations. Her love of agates in particular came through loud and clear in many of her works. While she was traveling, collecting, writing, and attending shows, she established, maintained and contributed to a mineral museum in Purdo, South Dakota.

I can't recall when I first met June, it was so many decades ago. It seems I have always known her! Like so many friends in our hobby, I simply got to know her while attending shows, listening to her lectures, and reading of her adventures in books and magazines, including *Rock & Gem*.

I may well have met her at a show hosted by the American Federation of Mineralogical Societies, of which she was a very active member and officer. Or it could have been at a show in Tucson, where everyone eventually meets! Whenever and wherever it was, she has remained a good friend and strong supporter of the hobby in all its facets. To say we will miss her sounds almost trite! Luckily, we can always be with her through her many writings and works.

That the hobby has lost one of its greats is an understatement. In my mind she stands with Dr. John Sinkankas, Dr. Fred Pough, and several others whose contributions to this science and hobby are profound. Her works will continue to contribute to our love and understanding of Nature and the earth sciences for generations to come!

I feel that for me to write about June would be presumptuous, as I only knew



The passing of June Culp Zeinter, who was honored at the 2008 Agate Conference in Wisconsin, is a great loss to our hobby.

her through our casual friendship and meetings at shows, through her work, and through the occasional phone call. It seems far more meaningful to recognize her through one of her dearest friends, Brad Cross, someone who spent far more time with her, co-authored books with her, and was a close friend with her to the very end. Be sure to read his article on her life, "A Tribute to a Legend: June Culp Zeitner", (January 2010).

#### **WILDACRES 2010**

Every three years or so, I am invited by the Eastern Federation of Mineralogical Societies (EFMS) to spend time at an educational retreat at Wildacres, near Little Switzerland, North Carolina. This event is a highlight of the year for rockhounds and one I look forward to each time I am invited. Three years have passed since my last invitation, so I'll be back in the hills of North Carolina lecturing Apr. 23-29, 2010.

Wildacres is a privately owned, hotellike facility that is available to nonprofit groups like the EFMS. It is set in the serenity of the mountains of Western North Carolina and is a perfect place for a week of classes and fun.

Though the one-week retreat was initially open only to members of the Eastern Federation, anyone can now apply to attend. Folks from as far away as California and Idaho show up. A series of excellent classes is offered on a daily basis.

The week starts when you arrive and are assigned your room, which you share with someone else. The setting is much like a country hotel, complete with local food, the wind whistling through the trees at night, and rocking chairs on the large porches! At a general meeting that first evening, we get acquainted and hear a review of the week's schedule. Then the teachers, all great folks, explain what they will offer and you sign up for whatever interests or tempts you.

The classes offered vary slightly each year, since they are based on who is available to teach, but you can be sure they'll include topics like silversmithing, faceting, show judging, wire wrapping, and carving.

Classes are held each morning after the speaker—yours truly this year—gets things started with a talk on a mineral-related topic. Classes break for lunch and resume until about 4 p.m. No matter what day it is, after meetings and classes a not-so-rowdy, but very talkative, group assembles on the porch, rocking back and forth while discussing the latest gossip and activities of the hobby until the bell rings for supper.

Meals are great! They are served family style, and you get to sit with various friends of your choosing. Meals incorporate food that is locally produced and vary according to what is available, and you never leave the table hungry. In fact, each time I return from Wildacres, I have to lose a few well-earned pounds!

After two full days of classes, you get a day off and can choose from an assortment of activities. There is always at least one field trip planned for the free day. You can do a nature walk in the area or simply enjoy a day on your own. You can head into Asheville, which is not that far away, and visit the Vanderbilt Mansion or do laundry, if that's your thing! I like to check in at the Colburn Natural Science Museum in downtown Asheville, right on Park Square. They have great interactive sections for kids and some really nice displays.

On the free day, most folks get back to Wildacres in the early afternoon to take advantage of the annual tailgate event. A dozen or so of the folks have minerals in their car trunks for sale or trade, and you have fun listening to the related collecting adventures, which are always good for a laugh!

Free day is followed by two more days of classes, each starting off with another, different lecture. My first year at Wildacres, I gave nine talks—two each day and one each evening—but that many talks take away from class time, so we only do one each day classes are held.

I've been going through my speaking notes already and think I have some topics chosen. One talk I know I will give is "The Minerals of England". That's because as soon as Wildacres ends, I'll be flying to England to lead a group of collectors on a mineral tour of museums, collections, underground mines, and collecting sites!

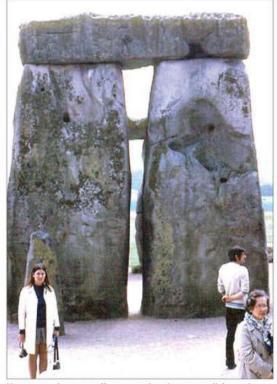
The other topics I'm considering are "Rhodochrosite", "Popular Lapidary Stones" (charoite, sugilite, etc.), "Malachite and the Copper Minerals", and "Quartz and Agate: Everyone's Favorite Rocks". One fun topic could be to simply ask the audience members to name their favorite rocks and give an off-thecuff commentary on them. As you can see, things are wide open and only marginally organized. However, the organizing committee usually has activities planned for evenings after supper. Once in a while a planned talk or activity doesn't happen, but we can always do the "What's Your Favorite" thing! I've attended Wildacres often enough to come prepared with more than four talks, just in case.

The highlight of Wildacres week is what is affectionately called "Friday Night Frolics", even if they are held on another night of the week. The last night of the retreat is fun night. Folks you would ordinarily consider a bit staid, demure or even shy, will sign up to perform. You can bet the evening meal on the night of the Frolics will not feature corn on the menu. The Frolics supply enough of that to last you all the way home! Some of those who have attended Wildacres before know what is coming and they plan costumes, write scripts or songs and otherwise get ready to bust loose on that last night. If such an evening were held on the first night, some



The free day during the Wildacres retreat includes a tailgate event at which collectors trade rocks and tales of discovery!

might decide they made a mistake in signing up. But after getting to know each other and sharing meals, a field trip, and evenings on the porch, we know each other well enough that what happens in Wildacres stays in Wildacres! Las Vegas has nothing on us!



You can no longer walk among the giant monoliths at Stonehenge, but they are still very impressive.

Readers who would like to sign up for the Wildacres retreat can write to Steve Weinberger, P.O. Box 302, Glyndon, MD 21071 for an application. The cost, whatever it is this year, is modest when you consider you get a week's lodging and classes and all the food you can eat. The entertainment is suspect, but maybe you'll learn something from my talks!

#### MINERAL TOUR OF ENGLAND

For the past several months I've been writing about the mineral tour of England that is planned for May 4-14, 2010. It's all set now.

All the museums know we are coming. The underground mine folks have been alerted to our visit. The collecting sites have been identified and are accessible. There's nothing more to say about it except to suggest that you consider joining us. You can get all the details about the trip on the tour company's Web site, www.crizmac.com.

One opportunity I have not written much about is what we plan to do after the tour in England. We'll end the tour in Cornwall with lunch in a castle. The last day, we will drive through Salisbury to see Stonehenge, a remarkable, ancient, religious and scientific site that most of you already know about. Some years

ago, I was able to walk among the huge monoliths and marvel at their immense size and positioning. The area is now fenced off, so you can walk around, but not among, the stones. Still, the place is impressive for its antiquity and size.

Upon our return to London, you will be free to pursue your interests or head home if you wish. I'll be staying for a bit and will be available for a visit to the British Museum, which is not on the tour itinerary. The British Museum, started over 250 years ago, houses a remarkable assemblage of art, artifacts, objets d'art, and cultural exhibits. Seeing all of it will consume more than a day.

Of particular interest to rockhounds will be the life-size human skull carved out of quartz that sits in a small glass case in a corner of a vast hall. I plan to talk with anyone who wants to meet me there about quartz skulls and my acquaintance and experiences with Anna Mitchell-Hedges, who is credited with finding the first crystal skull in Central America in 1921!

The British Museum also holds one of the more important artifacts ever found in Egypt, the Rosetta Stone. This large mass of gray rock, carved in three languages, made it possible for scientists to decode Egyptian hieroglyphics for the first time. It was found by a French engineer in 1799 and came to the museum in 1802.

So to really enjoy England, plan on staying on after the tour so you can visit the British Museum, the Victoria and Albert Museum, or the Science Museum or just go back and spend more time with the Natural History Museum collection.

Bob Jones holds the Carnegie Mineralogical Award, is a member of the

Rockhound Hall of Fame, and has been writing for *Rock & Gem* since its inception. He lectures about minerals, and has written several books and video scripts.



### ield Notes

Field Notes submissions are subject to editing. Address questions to "Editor" for a private response or to "Readers" and provide the contact information you'd like published. Send to Field Notes, Rock & Gem magazine, 290 Maple Ct., Ste. 232, Ventura, CA 93003.



#### Correction

The specimen on the cover of the January 2010 issue was misidentified in the Table of Contents. The correct cover line is:

This 3.8-centimeter-high gold specimen was mined in the area of Santa Elena, Bolivar, Venezuela. (Jeff Scovil photo/ Jon Sigerman specimen)

Thanks to Dave Waisman, of Spokane, Washington, for pointing out the error.

—Editor

#### **Ametrine Rough**

I read the column Off the Dop in the December 2009 issue ("Faceting Ametrine", p. 60) about faceting ametrine today and was very concerned about the statement to the effect that, unless you dug it yourself, you should probably assume that ametrine rough is treated or synthetic. I consider that statement to be untrue and falsely informing the public. I (and probably lots of other dealers) have plenty of natural old-stock ametrine in the form of cobbed rough, partial crystals, and specimen crystals of ametrine.

Ironically, this past weekend I saw my first piece of synthetic ametrine. It was obviously lab grown and was labeled as such. But frequently in my travels I see ametrine for sale, and sometimes in big crystals that obviously have had no treatment other than being with washed with soapy water, if even that. In fact, at one show I do in Spruce Pine, North Carolina, a fellow has an 8-foot table mounded up with natural ametrine rough crystals.

Admittedly, the main player at the Anahi Mine has cut off the supply of rough and refuses to sell anything but cut stones, and this has made ametrine scarcer every day that passes. I tried to buy rough from them and begged in three different languages (English, Spanish and Portuguese) ... to no avail. But I do take issue with the statement you made. It is quite distressing, because quite a few folks will believe it.

What I have and what I normally see offered for sale is either "hammered" or otherwise cobbed pieces of rough, as well as broken crystals and whole crystals. It is usually easy to tell that this first type is natural material, especially if it has evidence of a crystal face or grades into lesser quality and obvious natural stone. The second type of material, obvious crystals, are most likely all natural 99 percent of the time. This is because I believe the synthetic type is usually boules and no crystals are subjected to treatment.

Sawn material would certainly be suspect to me, especially if it appeared "perfect" with artificially sharp color delineation and with an absence of any flaws or inclusions at all.

> —Rodney Moore via e-mail

My statement was made to inform faceters that there is a lot of treated rough on the market and to warn them to be careful. Any rough dealer that knows the source of their rough can document it and will be willing to state it on a sales receipt. I know many reputable rough dealers who follow this practice by saying "Treatment: Unknown" or "Usual Treatment: X, Y or Z", as applicable, in accordance with Federal Trade Commission guidelines. Those not willing to document the source or treatment status might be suspect in my mind.

> —Jim Perkins Off the Dop columnist

#### Facebook Friends

Let me introduce myself and my wife Connie. We have an in-house jewelry business. We do club shows mainly in the midwest. I facet gems (so naturally the first thing I look to in *Rock & Gem* is Jim Perkins' column and the facet diagram) and my wife does bead work. We really enjoy doing the club shows; we meet so many great rockhounds and other dealers, we really have expanded our list of friends. Our home club is the Des Plaines Valley Geological Society in Illinois. We joined several other clubs, also. Again, expanding our list of great friends.

-Frank Lavin via Facebook

#### **Budget Start-up**

Thank you for the very interesting and encouraging Shop Talk column regarding building or rebuilding lapidary equipment to create a home workshop ["A New Machine", January 2010]. I have been an avid rockhound for over a year and have collected or obtained lots of excellent agate and jasper material. Although I have access to lapidary saws and cabbing machines through a friend and the Searchers club workshop, I really wanted to have my own lapidary equipment. After recently being laid off from my job, I had the time to pursue my hobby but a very limited budget!

Your article gave me the encouragement I needed! I started by carefully studying a friend's lapidary equipment and several catalogs to make a parts and specifications list—especially regarding the electric motors and required RPM and HP. Then I began combing swap meets, yard sales, eBay and craigslist. I was also fortunate enough to be able to visit Quartzsite during January.

Last night, a friend and I finished putting together my first cabbing machine—assembled from parts found while in Quartzsite. The total cost was \$270 for the machine. With the money I saved, I was able to afford to purchase good Diamond Pacific wheels for the final sanding and polishing.

I am now working to rebuild several old home-built machines that a friend found at a yard sale and gave to me. There is a 2-wheel Poly arbor with motor, which will be my grinding machine landl a 10-inch trim saw with gravity feed. An 8-inch flat lap with motor was also found to be in working order and will only require a new belt and replacement of the electrical cord.

The "hunt" for parts and equipment has been great fun! Thanks again for the great article!

Jodi Boyd
 Westminster, CA



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Tucson, Arizona - Room 128, InnSuites January 30 - February 13, 2010

Raleigh, N. Carolina - Kerr Scott Building, State Fairgroun
April 9 - 11, 2010

Houston Fine Mineral Show, Embassy Suites Hotel, Room 201, Houston Texas. April 30 - May 2, 2010

Springfield, Massachusetts - Eastern States Exposition Center August 13 - 15, 2010

Denver, Colorado - Holiday Inn North, Room 115 September 15 - 19, 2010

Detriot, Michigan - Gibraltar Trade Center in Mt. Clemens (237 North River Road, about 10 miles away from our previous location), just off I-94 exit 237. October 9 - 11, 2009

Houston, Texas - Humble Civic Center November 13-15, 2009

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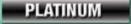
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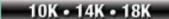






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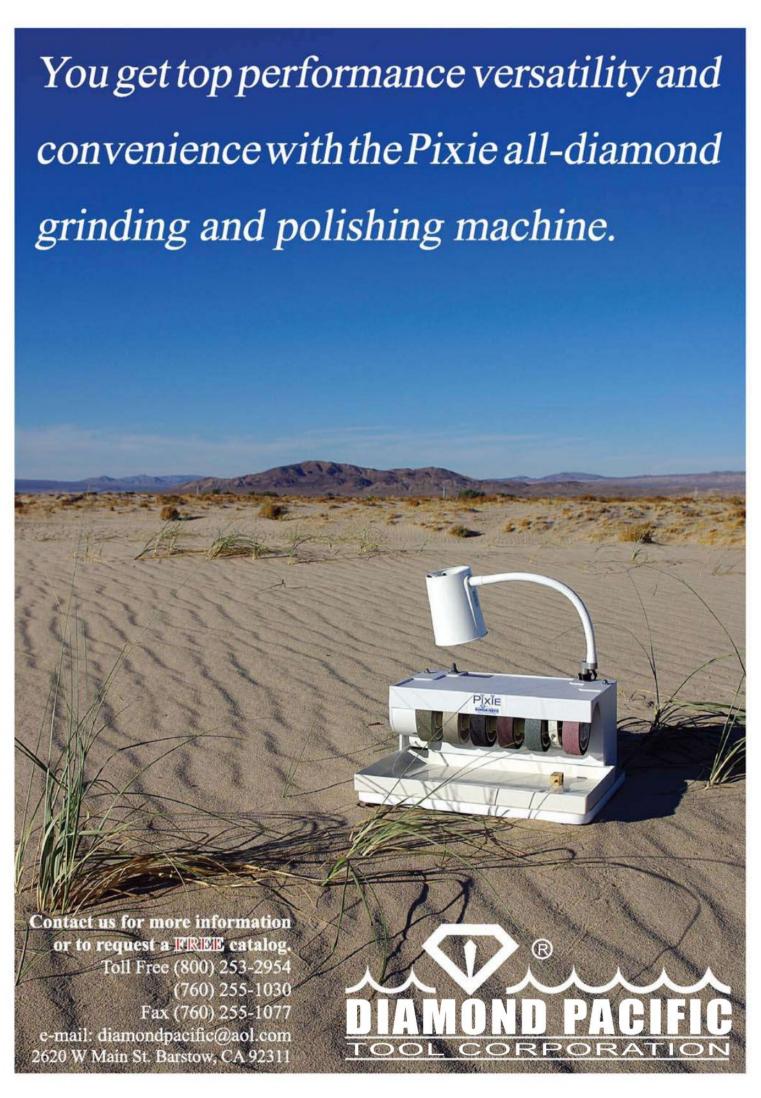


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