

WHITTIER

ROCKHOUNDER
GEM & MINERAL
SOCIETY

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The Sapphires of Montana
Presented by Dick Flaharty



Sapphires from the Missouri River in Montana

ROCKHOUNDER

THE PREZ SEZ:

Hello Everyone!

Welcome back from your summer vacations. I hope everyone had a safe and enjoyable summer. I am finally feeling better myself and eager to get back to work with the club. Remember our show is coming up and as usual we can always use all the help we can get. We will also be having a rockhound yard sale coming up and would appreciate all the support we can get.

September is also the month we select our nominating committee so if you have ever wanted to take a more active role in the future of the club, this is the time to make it known to the members who will be selected as this committee.

Enjoy the rest of your summer and we'll see you at the September meeting.

James



WGMS General Meeting

Thursday, September 22, 2005

at 7:30 PM

The Sapphires of Montana

Program for September will be presented by **Dick Flaharty**. He has traveled to the northwest many times and has several programs regarding field trips in that area.

Dick will present the program, The Sapphires of Montana. If members have collected in these areas please share your collection with us at the next meeting.

Izzie

WGMS ROCKHOUND YARSALE!!

September 17 & 18, 2005

8 AM to 3 PM - Both Days

Strictly BYOB - Bring Your Own Bucket

Items sold by the bucket, by the pound and by the item

**755 W. Dike St.
Glendora, CA
(626) 914-5030**

This summer, members of the Whittier Gem & Mineral Society spent several weekends working on the extensive rock piles at Joe & Marcia Goetz' house and have succeeded in bringing some semblance of order to the chaos. This unwieldy collection of various lapidary materials and equipment is an accumulation of many years of Club field trips, extra sales table materials and direct donations. It is contained in boxes, buckets, piles and various sundry containers. The plan is to sell as much of this extra gem rock and equipment to as many people as we can on **September 10 & 11**. This **WGMS ROCKHOUND YARD SALE** will be in the back yard of **Joe & Marcia's home** in Glendora with a more traditional yard sale in the

front. If you have any extra "stuff" that you would like to donate to benefit the Whittier Gem & Mineral Society, please bring it for us to sell. We can also use your assistance at the sale on both Saturday and Sunday.

We will be doing the final setup and preparations on Friday, Sept. 16th. This will be YOUR opportunity to go through the materials for sale before we open to the general public. Members will receive BIG discounts and many great bargains await you.

The biggest rock pile is about 1500 lbs. of Tick Canyon howlite. There is petrified wood, many kinds of agate and jasper, onyx, soapstone and lots of obsidian of various types. We also discovered that we have some crystals, geodes and minerals. In our quest for saleable gemstones, we also found a considerable amount of yard, decorative or landscaping rocks. These rocks are free. All you have to do is take them with you when you leave (please).

There is lapidary equipment for sale as well, including a couple of corundum units on metal stands with attached trim saw (but without blades). All of the equipment is in working condition but we simply have no place to store it all.

I would like to thank the following members who freely gave of their time to help sort and clean the massive amount of rock. Joe & Marcia Goetz, Jack Zywoციenski, Susan Lomeli, Art Ragazzi, Vivian & Larry Rice, Jerry & Kathy Turner and Vern & Sylvia Cliffe.

JValle

**Pool Party
Clarence and Frieda's
75th Anniversary**

Congratulations go out to Clarence and Frieda Pool on staying together for 75 years. Their anniversary celebration was held at the "ranch" in Pico Rivera on Saturday, August 13. It was attended by family and friends, including sons and daughter, grandkids and some great-grandkids (rumor has it that they have a great-great-grandchild now as well). We could tell when family arrived because they all brought dogs (most of them, anyway). Other guests included members representing the Whittier Gem & Mineral Society and the North Orange County Rock Clubs.

The weather cooperated and stayed unseasonably cool with a nice breeze keeping things comfortable. Clarence spent time with all of his guests and a few pleasant hours were spent socializing with friends and acquaintances.

Sapphires

The production of gem-quality sapphires in the United States is not new or recent. In 1865, the first U.S. sapphires were found in the gravels of the Missouri River in Lewis and Clark County, Montana. This was followed by subsequent discoveries on Dry Cottonwood Creek in Deer Lodge County in 1889, on Rock Creek in Granite County in 1892, and in Yogo Gulch in Judith Basin County in 1895. Additionally, small amounts of sapphire are recovered from Quartz Gulch in Granite County, Pole Creek in Madison County, the Missouri River in Chouteau County, and Brown's Gulch in Silver Bow County. Furthermore, corundum crystals, from which star sapphires have been cut, are found in Beaverhead and Madison Counties. Also, in 1895, the first sapphires were produced from the Cowee Valley in Macon County, North Carolina. But until very recently, with the exception of Yogo Gulch material, the commercial gemstone industry has had limited interest in U.S. sapphires.

Montana.--Mining of Yogo Gulch sapphires began within a year of their discovery in 1895 and continued for 39 years. In 1923, the mine was damaged so badly by rain that it could not economically recover. Other attempts have been made to commercially mine the deposit, but to date, all of these attempts have ended in economic failure.

Yogo's are unique among the world's sapphires. They lack the color zoning so prevalent in other sapphires, their uniform "corn-flower blue" color is natural (not the result of heat-treating), and their clarity is uniformly high. These features rank them among the world's finest sapphires. Unfortunately, the rough is both small and flat, wafer-like in shape. The majority of the crystals or pieces of crystals recovered are too small to be cut, most are less than 1 carat and finds of over 2 carats are rare. Reportedly, the largest crystal was a 19 carat stone found in 1910 that was cut into an 8-carat stone. The size of the cut stones greatly restrict the market for Yogo's, they are beautiful, small, very expensive sapphires.

Currently, Yogo sapphires are produced from three sources: Rancor Inc., produces material from the original Yogo Gulch deposit; Vortex Mining produces from a recently discovered extension of the Yogo dike; and material is produced by individuals from privately owned lots in Sapphire Village. The first two producers market only cut stones and finished goods and the third is comprised essentially of hobbyists.

Historically, the amount of sapphires produced from the Missouri River and Rock Creek areas greatly exceeded that from Yogo Gulch. However, the val-

ue of the material produced from Yogo, reported to be in excess of \$30 million, is significantly greater than that of the combined values of the other areas. This relationship is rapidly changing.

The combination of large volume commercial operations on the Missouri River, and to some extent Rock Creek, plus the advent of successful heat-treating techniques for the material has greatly enhanced the acceptance of these sapphires by the gemstone industry. This enhanced acceptance has resulted in a significant increase in the market for and value of U.S. sapphires. Unconfirmed reports have circulated that a parcel of select 3- to 10-carat material, suitable for heat-treating, was sold for as much as \$40,000 per kilogram. A more realistic price for 3- to 10-carat, sorted mine-run material is in the range of \$5,000 per kilogram, with many kilograms of mine-run rough selling for \$1,000 per kilogram.

The sapphires from the Missouri River gravels in Lewis and Clark County are a mixture of rough and pitted crystals showing well defined faces and completely rounded and smooth-surface highly stream worn pebbles. The majority of the material is pale blue or blue-green, with deep blue stones quite rare. Stones also are found in pastel blue, green, pink, pale red, purple, yellow, and orange. Most of the stones recovered are less than 6.4 millimeters in diameter, but material 6.4 to 12.7 millimeters in diameter are not uncommon. Material greater than 12.7 millimeters in diameter is rare.

Currently there are seven operations on the Missouri River that commercially produce sapphires and/or operate a dig-for-fee area. Not all of these may be active in any one year. It is the author's understanding that one operation, currently inactive, (a self-propelled floating 16-inch suction dredge) is for sale. The mines operate from about the last week of May through the first week of September.

The Rock Creek sapphires are very similar to the sapphires from the Missouri River but differ in the general shape of the crystals. The stones are basically crude hexagonal plates about the same dimension in width and height, with a much higher percentage of the material being well rounded water worn pebbles. There appears to be more of the larger sized (greater than 12.7 millimeters) material. Additionally, it is reported that the Rock Creek material has a greater percentage of stones that can be heat-treated for color enhancement.

During the past several years, there has been only a single producer on Rock Creek. The producer operated both a commercial recovery plant and a fee recovery area. The fee recovery area sold buckets of gravel for washing and

(Continued on page 8)

**Field Trip
Castle Butte
Sept. 24th & 25th, 2005**

The first trip of the fall season as you read in the title is to Castle Butte. There are many types of rock to find including Petrified Palm, Palm Root, Purple & Burgundy Agate, and Bloodstone and miscellaneous other things people find out there. We'll have a potluck on Saturday evening and possibly a campfire if it's not blowing.

The trip is close enough for a day trip. However, it much more enjoyable to camp out there, if you have the means to do so. And if you come out on Friday evening, when you wake up on Saturday morning you don't have to rush out there. If you have a CB radio we typically run on channel 14 and on the little FM radios I believe it's channel 7, and of course you can always use your cell phone.

Bring shovels, picks, chisels, hammers and the usual stuff. Be sure to have plenty to drink when we are out there collecting.

The directions from the eastern San Gabriel Valley are to go out on I-15 toward Vegas. When you see the junction with Hwy 395, take Hwy 395 north to Kramer Junction. That crossroad is Hwy 58. Turn left (west) toward Mojave and continue west until you see the off ramp for Claymine Road. Get off at Claymine Road and head north, shortly you'll see the signs that will guide you to camp. Hope to see you there!

*Lost evermore
Joe Goetz*

Sapphires (continued from page 7)

also offered, for a predetermined fixed fee, the output of one day's operation of the commercial wash plant. There is work underway which would result in a second, much larger producer, opening an operation on another deposit in the area. If things go as planned, the new operation on Rock Creek would be the largest sapphire producer in Montana.

There are a number of locations between Dillon in Beaverhead County and Ennis in Madison County that produce lavender, grayish-lavender, bluish-gray, and gray hexagonal sapphire crystals that, when cut, produce stones that contain four- or six-ray stars. At least one producer from the Dillon area is currently advertising the availability of this type of material. The

remainder of the sapphire deposits in Montana appear to be operated by individual hobbyists.

More should be said about the effects of heat-treating techniques on Montana sapphires, and the variety of fancy colored sapphires available. Not all Montana sapphires are suitable for heat-treating because of variations in chemical composition. Also, the sapphires from the Missouri River respond to heat-treating differently than those from Rock Creek. The response to heat-treating can vary also depending upon the method (individual) used to treat the sapphires.

The yield on treatment of Missouri River sapphires is lower than for Rock Creek. It is reported that 20% to 30% of Missouri River sapphires heat-treat from deep, well saturated blue to pale, pale blue. The corresponding treatment rate for Rock Creek material is in the range of 60%. Heat-treating also yields or improves the color of fancy colored sapphires. Bright yellows and oranges are the result of heat-treating, whereas heat-treating improves the color of some pinks by removing colors that can interfere with the desirable pink shades. Montana sapphires can be diffusion treated, but because of their high iron content they are not particularly well suited for this form of enhancement.

North Carolina.--North Carolina is well known for its hobbyist production of sapphire. Sapphire have been produced from the Cowee Valley in Macon County since 1895 when the American Prospecting and Mining Co. systematically mined and washed the gravels of Cowee Creek. Today a number of dig-for-fee operations are located in the Cowee Valley. Each year many people pay to dig or purchase buckets of gravel to wash in hopes of finding a sapphire, garnets, and other gem materials. Many of the dig-for-fee operations have enriched the gravels with gem materials from other locations.

Every year articles appear in magazines and newspapers about large and valuable sapphires found at one or more of the mines in Cowee Valley. No doubt large corundum crystals and pieces of corundum are found each year. By the same token, valuable sapphires may be found, but the number of large valuable gemstones are far less than reported, and the values are generally not as great as reported. During the period when the area was commercially mined, gem material was found that would cut fine quality 3- to 4-carat stones, but the amount of quality gem material available has greatly declined. It is doubtful that North Carolina will ever again boast of commercial sapphire production, or that the commercial gemstone industry will seriously consider the State's sapphire deposits.

Reprinted from USGS Brochure SP-14-95

**Vern & Sylvia Cliffe's
Rock Collecting Trip
Caldwell Idaho Club Style**

During our recent trip to visit Dan and Diane Stevens in their new home in Idaho, they invited us to join them on the Saturday club field trip on June 18, 2005 to collect pink plume agate at one location and petrified wood at another. With room to spare, Dan and Diane invited us to travel with them rather than taking two vehicles. The club, along with members from the Boise club and guests, met at a road junction about half-way to the first site. There was a wide variety of vehicles, mainly 4X4's with two smaller sedan 4X4's. The field trip leader, John Howell, drove an older 4X4 with a large shell, and pulled a pick-up bed trailer also with a large shell which served more than a place to carry rocks (more on that later). Two of the members each had two 4X4 ATV's, carried on a trailer and truck bed respectively. Those attending the field trip all signed in on a Disclaimer of Responsibility/Obligation numbered form (more on that later) in order to attend the field trip. There were about 36 persons on the trip. The countryside was predominately hilly and covered with short native grass, which presented a problem for persons who wished for privacy while hunting rocks. Carried on the side of the field trip leader's trailer shell was four 4x8 white-painted sheets of hinged plywood. At the collecting site, it was unfolded and set up with a porta-potty inside for privacy. Appropriately painted on the outside were the words, "The White House"! It was very adequate, obviously not new, apparently a hold-over from the Clinton days!

The group spent about two hours at the collecting area with most persons finding nice specimens of the pink plume agate.

Potluck turned out to be at LUNCH, not at the end of the field trip and served on tables, furnished by non other than the field trip leader, John Howell! After potluck, John brought out a large ice chest and asked if anyone would like CHOCOLATE SWIRL ICE CREAM? That was a fitting end to a great potluck. THEN, John called off one of the numbers from the sign-up list and that person won a prize, donated by the person who had won the previous month's prize! Of course, that meant that the "winner" had to provide a prize for the next field trip.

(Of interest to Sylvia and me was that the same system of drawing a name from the sign-up list at the end of the monthly meetings followed the same rule! It was the club's way of encouraging members to stay until the meeting ended!)

After the lunch, the club headed out to the anticipated petrified wood area. As we arrived close to the collecting area, a brief, but heavy rainstorm, accompanied by hail pelted the group for about fifteen minutes soaking the ground and filling the tire tracks with water. The decision was made to terminate the field trip at that point in time and everyone managed to get turned around and headed out to solid pavement and home.

Our experience with the field trip was one of great satisfaction. The persons attending were warm and friendly to the extent that we felt "right at home". John Howell, we were told, had only joined the club about six or seven years previously and had taken to leading field trips just as if he had been doing it for years. He may have been the person who brought up the suggestion to give a prize away during lunch on the field trips and at the end of monthly meetings.

Government in Action

Officials in Montgomery County, Md., regard the feathery green plant called the mugwort as a weed, an "alien invasive plant," and periodically lament its presence in the county's parks, according to a June Washington Post report. However, local Koreans, who call the plant "souk," consider it a delicacy in seafood soup and rice cakes, and have eagerly been digging it out of the parks for free, except that it is illegal to remove anything, even weeds, from the parks. Consequently, according to the Post, county officials have simultaneously undertaken (a) a pilot program to see if goats could be trained to root out unwanted flora and (b) a stepped-up program to convince the Koreans to obey the law against removing mugwort. [Washington Post, 6-2-05]

Chuck Shepherd's News of the Weird, Week of July 17, 2005

<http://www.newsoftheweird.com/>

How to Tell Your Adit from a Hole in the Ground By Walt Margerum

If you are like me you come across mining terms all the time and sometimes you wonder what they mean. I have therefore compiled a short list of terms with their meaning to assist and edify everyone.

- 1. Adit:** An almost horizontal tunnel from the surface to where you hope the ore is. Sometimes the adit is dug primarily for haulage of the ore from the vein to the outside so that it can be more easily put in the dump. In this case it is called a haulage adit.
- 2. Decline:** A tunnel dug at too steep an angle to easily walk. When you are at the bottom it is called a **X%&\$** incline.
- 3. Drift:** A horizontal or nearly horizontal tunnel that usually does not intersect the surface, but hopefully follows the ore. If it intersects the vein it is called a cross drift. If it passes through the vein it is called a **X%&\$** drift.
- 4. Dump:** The large pile of useless rock you spent many hours removing from the mine to get at the ore. Quite often everything from the mine.
- 5. Foot Wall:** The lower wall of a vein. The one you try to stand on that is usually steep enough so that you slide down it to the vein.
- 6. Head Wall:** The upper wall of a vein. The one you bang your head on.
- 7. Mine:** A usually valueless hole in the ground into which otherwise intelligent individuals are willing to spend all their money.
- 8. Ore:** The material removed from the mine that is sold in a vein attempt to make a profit.
- 9. Raise:** A vertical or almost vertical shaft dug after you discover the vein is above the location of your tunnel.
- 10. Shaft:** A vertical or almost vertical hole dug from the surface either along the vein or to where you hope the vein can be found. It is used to extract the ore until you decide it is easier to dig an adit for that purpose. This decision is usually made long after common sense dictates that is how you should have done it in the first place.
- 11. Stope:** A large hole dug to extract the ore. If the ore falls on your head as you remove it is called an overhead stope. If you have to bend over to dig the ore it is called a backache.
- 12. Tunnel:** A drift or adit. The term is usually used when you get lost and do not either intersect the surface or the ore.
- 13. Vein:** The body of rock that contains mostly gangue, and a small amount of ore.
- 14. Winze:** A hole dug to intersect the ore after you discover the vein is below the level of your tunnel.

I hope you find these definitions useful.

From MCSC 7/05 via MOROKS Newsletter 8/05

From: Jay Valle
Sent: September 2005
To: WGMS Members & friends
Subject: Laughter is good medicine

You know you are living in 2005 when...

1. You accidentally enter your password on the microwave.
2. You have not played solitaire with real cards in years.
3. You have a list of 15 phone numbers to reach your family of 3.
4. You e-mail the person who works at the desk next to you.
5. Your reason for not staying in touch with friends and family is that they do not have e-mail addresses.
6. You go home after a long day at work and you still answer the phone in a businesslike manner.
7. You make phone calls from home and you accidentally dial "9" to get an outside line.
8. You have sat at the same desk for four years and worked for three different companies.
9. You learn about your redundancy on the 11 o'clock news.
10. Your boss does not have the ability to do your job.
11. You pull up in your own driveway and use your cell phone to see if anyone is home.
12. Every commercial on television has a website at the bottom of the screen.
13. Leaving the house without your cell phone, which you did not have the first 20 or 30 (or 60) years of your life, is now a cause for panic and you turn around to go and get it.
14. You get up in the morning and go online before getting your coffee.
15. You start tilting your head sideways to smile. :)
16. You are reading this, nodding, and laughing.
17. Even worse, you know exactly to whom you are going to forward this message.
18. You are too busy to notice there was no #9 on this list.
19. You actually scrolled back up to check that there was not #9 on this list.

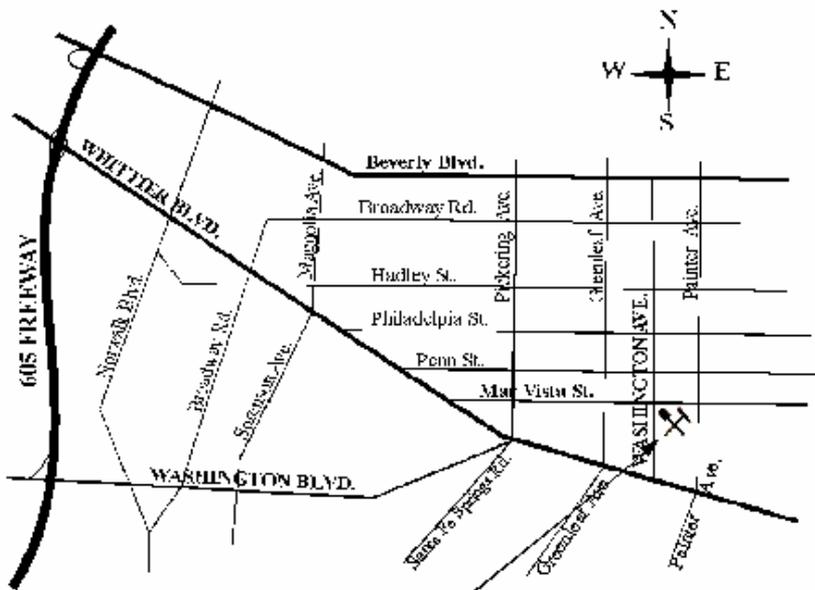
Now you are laughing at yourself, go on, forward this to your friends - you know you want to! DO NOT SEND THIS BACK TO ME YOU TWIT; I ALREADY HAVE IT. GROWING OLDER IS MANDATORY. GROWING UP IS OPTIONAL. LAUGHING AT YOURSELF IS THERAPEUTIC.

Forwarded by Jay Valle's co-worker, Refaat Hanna

Upcoming CFMS Gem Shows

- Sept 17-18 Paso Robles, CA.** Santa Lucia Rockhounds
Pioneer Park and Museum, 2010 Riverside Park
Hours: 10 - 5 both days
- Sept 23-25 San Bernardino, CA.** Orange Belt Min. Society - Tailgate
Western Regional Little League Park, 6707 Little League Drive
Hours: Fri., Sat. 9-6, Sun. 9-4
- Sept 24 Los Altos, CA.** Peninsula Gem & Geology Society
Rancho Shopping Center, Corner of Foothill Expressway
& Springer road, Hours: 9:30 - 4:45
- Sept 24-25 Downey, CA.** Delvers Gem & Mineral Society
Downey Women's Club, 9813 Paramount Blvd,
Hours: Sat. 10 - 6 Sun. 10-4
- Sept 24-25 San Diego, CA.** San Diego Lapidary Society
Bernardo Winery, 13330 Paseo Del Verano Norte
Hours: 10 - 4 both days
- Oct 2 Fallbrook, CA.** Fallbrook Gem & Mineral Society
Fallbrook Gem & Mineral Museum, 123 W. Alvarado St.
Hours 10 - 4
- Oct 8-9 Lakeside, CA.** EL Cajon Valley Gem & Mineral
Lakeside Rodeo Grounds, Hwy. 67 & Mapleview Street
Hours: 10 - 5 both days
- Oct 8-9 Trona, CA.** Searles Lake Gem & Mineral Society
13337 Main Street, Hours: Sat: 7:30 - 5: Sun. 7:30 - 4
- Oct 15 West Hills, CA.** Woodland Hills Rock Chippers
First United Methodist Church, 22700 Sherman Way
Hours: 10 - 5
- Oct 15-16 Long Beach, CA.** Mineralogical Society of Southern California
Long Beach Convention & Expo Center, 300 East Ocean Blvd.
Hours: 10 - 5 both days
- Oct 15-16 Whittier, CA.** Whittier Gem & Mineral Society
Whittier Community Center, 7630 Washington Ave.
Hours: 10 - 5 both days

WGMS MEETING LOCATION!
Whittier Community Center
7630 Washington Ave. Whittier



MAR VISTA & WASHINGTON AVE.  WHITTIER COMMUNITY CENTER

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Bulletin exchanges are welcome and should be sent to the editor.

Affiliations



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Meeting Date: Sept. 22, 2005 at 7:30 PM
Location: Whittier Community Center
(see page 15 for map)