THE MOUNTAIN GEM

Gem & Mineral Society of Franklin, North Carolina

May 2020 Newsletter

Franklin Gem and Mineral Society

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The Club is a member of the American Federation of Mineralogical Societies and the Southeast Federation of the Mineralogical Societies.

The Gem and Mineral Society of Franklin, North Carolina, is a 501 (c)(3) organization and donations may be tax deductible. Please remember us when planning your estate.

GREETINGS MEMBERS AND FRIENDS

Well folks, it's been a month and it looks like things are slowly opening up but our museum is still closed and meetings are on hold. The July G&LW, Echo Valley, Highland Roads, and Macon County Gemboree Shows are still on the schedule for late July but whether or not they will be held is still up in the air.

In the meantime, I've pulled together some articles from our members for this month's newsletter. Tom Parker talks about faceting and more, Al Pribble provides a technique on making your own ear wires, Fred Plesner gives some historical information on our museum that used to be the county jail, and I continue the article on collecting in the Sonoran Desert.

I hope that all of you enjoy this Memorial Day weekend, spend some time thinking about the reason for Memorial Day, stay healthy, and that in a month we will have more positive news.

Stacy Walbridge
Editor

Faceting and More

Article and photographs by Tom Parker

I was scheduled to give the presentation for the FGMS May Members meeting. It was going to be about Opals, anything from finding them, where they are found in the world, the various types of opals, how to identify them, how to cut and polish them how to handle them and how best to set them for jewelry purposes.

That subject is one which needs to be presented with video, photos, passing around samples and active discussion. Unfortunately it's not something I'd wish to attempt in a newsletter article.

So, what have I been doing during this COVID-19 pandemic period? I've called many friends, sent a lot of emails, checked on my friends, asking them how they doing? Asked questions the about different stones I've been faceting, how to get my Facetron adjusted correctly, I purchased a new cutting lap, been faceting a variety of different stones, from quartz, Montana sapphires, topaz, beryl, synthetics, literally dozens of stones in dozens of patterns and many colors.

I've been challenging myself to be better, make sure my angles meet as they are supposed to. Making sure my angles are correct, and I'm not leaving a minefield of scratches which will certainly lengthen my polishing time. I've cut stones as little as 3.5mm all the way up to 14 mm rounds, cushions, ovals, rectangles, squares, octagons.

Faceted Stones by Tom Parker

I've picked John Hayes brain quite often and remembering my earlier discussions with John about cutting and polishing material the one thing he repeated now and again..... "if you want to be a faceter you have to push yourself to keep going smaller." Work your way down from 12mm stones which everybody starts off with. Become a decent cutter on the larger stones and challenge yourself to cut smaller stones, try an 8mm, try a 6 mm stone. Keep cutting smaller, go smaller, get practice cutting smaller stones!

Well John, I'm down below 4mm and very happy with my results. I've mixed my cutting patterns between round, cushion and oval, some were flat stones so I got a good rose cut crown pattern and followed it. I've had these small Rock Creek Sapphires I brought home from my last summer Montana trip and been cutting small. Thanks for the advice John because I'm enjoying what I'm doing.

.55 caret-4mm cushion cut

Another great tidbit of information from John was to look up a internationally recognized faceter named Jeff Graham who passed away years back and no longer is with us. Jeff Graham wrote numerous articles about faceting and held several design awards for his faceting diagrams. His articles are invaluable for someone interested in learning about faceting. His facet diagrams are beautiful and I've used several.

My second shout out goes to Norm Holbert. Between John and Norm, I've gotten a pretty good introduction to faceting. Norm has set me straight on the latest and best types of laps to use for cutting and polishing. He passed me a bag of small white topaz at a meeting one night and told me to give it a try. He also gave me a copy of the Cutting Diagram he has registered with the International Faceters Guild, named "Brilliant Octave", It's a pretty cool 8 sided cut with a step crown. I used one of the small white topaz's Norm gave me and ended up with a 9mm / 3.7 carat beautiful Brilliant Octave in white topaz cut with my 600grit sintered diamond lap and polished with 50k diamond lightning lap. It shines like a diamond.

And my last shout out for my faceting experience:

I was over to Jerry and Diane's house on one of my many visits last year (not recently as we are in hibernation) and Jerry and I were talking about faceting and he opened up his old toolbox and he had a piece of synthetic ruby, a piece of synthetic white sapphire and a piece of rough, natural aquamarine. Jerry gave me these and told me to get cutting. This was the week before I started my refreshed faceting course with John Hayes. After cutting numerous pieces of glass which John supplied I dopped up a piece of the synthetic ruby I cut off the piece Jerry gave me and I cut it. I've got to tell you, cutting this piece of synthetic ruby was where I learned how to polish. It took me forever to get that hard synthetic ruby polished. It's hard! But with guidance and the right equipment, it gets done.

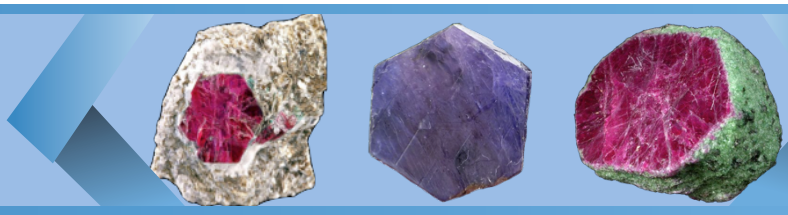
A month or so later I was back over at Diane and Jerry's. Jerry and I were out in the rock shop and he asked me if I was going to continue with my faceting. I was. I like it and find it a good challenge. He hands me a chunk of a clear white stone and says to me, tell me what that is, and you can have it. It was perfectly clear, loupe clean, brilliant shine to it. I turned it over and over, looked at it, felt the weight, heavier than quartz, lighter than corundum, looked at the shape and something about the way it was shining just told me it was white topaz. I said, White Topaz, Jerry said, it's yours! Then he went on to explain the way Topaz shines and may often be mistaken for a beautiful diamond. He was right of course. I went home and the following week I cut two matching teardrops from that white topaz, beautiful cuts, a dazzling sparkle and polish. Was proud to give one of these white topaz teardrops to Jerry at the next time we met.

I'm off and running with a great bunch of Club Members who have steered me in the right direction with regards to becoming a better faceter. Thanks John, Norm and Jerry.

Making Ear Wires
Article and Photographs by Al Pribble

Some people call me cheap, I prefer to think of it as “thrifty”, but when it comes to making things for my silver work I look for ways to do it for myself. One of the ways I have found to save money is by fabricating the ear wires I use. Now I hear some saying, “What about the cost of your time?” Are you kidding me? I am quarantined with nothing else I need to do and besides as a retired person my time is probably $0.10 per hour.

Anyway, if you are like me and would rather spend half an hour making a few ear wires I have found some good tips lately for doing so.



First of all you should use ½ hard wire in order for the wires to hold their shape. In the past I have laid the wires on a steel bench block and tapped them with a rawhide hammer. This will give the wire some stiffness, but is not very precise. There are two other ways to harden the wire before cutting that work very well. The most precise way is to pull it through a draw plate to a smaller size. For instance if you wanted to use 20 gage wire you could draw 18 gage down to 20 gage and achieve a ½ hardness. This also gives you an increase in length of 7 inches for each foot of 18 gage wire.

Another method I have found without the draw plate is to hold one end of the wire in a vise and hold the other end with Vise-grip pliers or a hand vise and twist it. I have found that 3 complete turns per inch of 20 gage wire will give a very satisfactory stiffness, although I don't know the exact level.

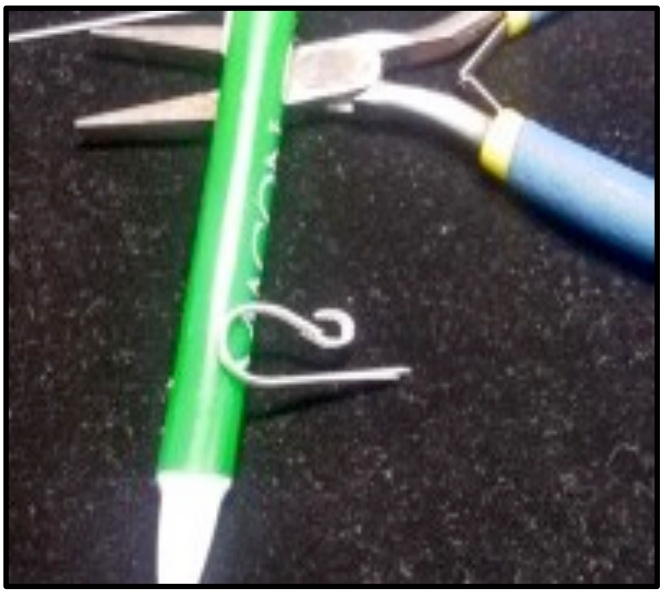
The next thing that has given me problems was making each ear wire identical to its' mate. So here is what I recently learned (I know, all you wire wrappers probably already know all this so go read the rest of the newsletter). When cutting each length, cut a piece long enough for two wires. The length will depend on how long you like to make them but 10 - 12 cm is a good starting place. Mark the mid-point of each piece match the ends together then finish the bend with a small pair of round nose pliers.

Then using your flat jaw pliers close the bend as tight as possible. It helps if you have a pair of pliers with a grove in the center like these parallel jaws shown here or you could modify an old pair of pliers by filing a grove.

Next I marked the round nose to 3mm and made the eye starting at the bend, the size of the eye is your preference.

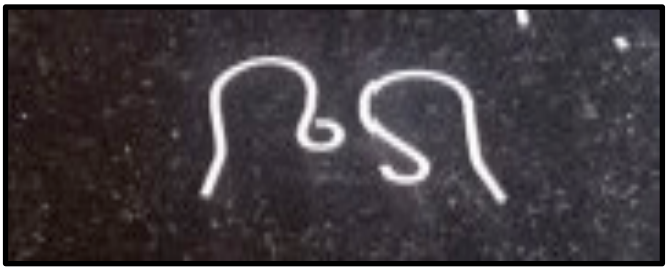
Not having a multi-step round nose, I use a small writing pen or a Sharpie Pen completing both wires at the same time.

Then make a small bend small tail on the end.



Use flush cutters to trim the wires at the eye , separating the two wires.

Round off the tail ends with a file and sand with 600 grit sandpaper for a beautiful set ready to hook your earrings on and close the eye.



Finished Ear Wires That Match

Signatures At The Museum
Fred Plesner, Curator Emeritus

Those of us who host at the gem museum are familiar with the name "Garry Shields. We enjoy telling the story of his incarceration and redemption but there are other stories of the "Old Jail" to be told.

To the left of the outer door to the slammer is the notation "Floyd Thomas 500 days". Floyd Thomas started out as a Juvenile offender. He was arrested on October 2, 1959 as an 18 year old offender and held on a charge of suspicion, a month latter he was picked up on November 1, 1959 on a public drunkenness charge. Between November and December of 1959 he apparently got into some kind of serious trouble because on December 3, 1959 he was picked up and held on a warrant from South Carolina. The question is did Floyd Thomas leave the notation or was it left by someone else who knew of his circumstances.

Jimmy Crane left his signature behind 4 times. You can find his name written on the steel door to the International Hall 3 times and on the right doorframe as you enter the rest room area. As best I can tell Jimmy Crane was another juvenile offender (18 at the time) who was allowed to serve his sentence on weekends because he was jailed on

December 6 – 7, 13, 20 – 21 and 27 – 28, a total of 7 days.

I can only hope that serving the weekend before and after Christmas was an awaking call to straighten up and fly right. I find it interesting that he was jailed 4 times and each time he felt compelled to leave his name.

Ben Grindstaff left both his address and the cause of his being in jail. You can find his name at the top of the stairs to the left of the outer door to the slammer, to the right as you enter the slammer and on the right doorpost as you enter the rest room area.

Ben Grindstaff was an habitual drunk driver who was first arrested on March 5, 1961 at the age of 35. He continued driving drunk and was again caught and charged with drunk driving. This time he served a week from February 6 -15, 1963. 2 weeks later he was caught driving drunk again. Arrested on February 19, 1963 he was kept jailed until April 22, 1963, a total of 63 days'

EMERALD - THE BIRTHSTONE OF MAY

Emeralds, Muzo Mine, Vasquez-Yacopí Mining District, Colombia. Photo Courtesy of en.wikipedia.org

Tools for Collecting in the Desert

Part 2 of Collecting in the Sonoran Desert

Stacy Walbridge
Photographs by Stacy Walbridge

Last month I highlighted a little bit of the geology of the Sonoran Desert and Arizona in particular along with some of the collectable minerals associated with copper. This month I'll provide some of the tools and techniques Kathi and I have developed over the years to collect in the desert.

Given that the climate in the summer months can be extreme and with the lack of rainfall you may ask why collect in the Arizona desert?

- Arizona encompasses about 114,000 square miles of which 19,000 square miles is managed by the Bureau of Land Management (BLM). Within those 19,000 square miles BLM has several designated Rockhound areas and allowance for mining claims.

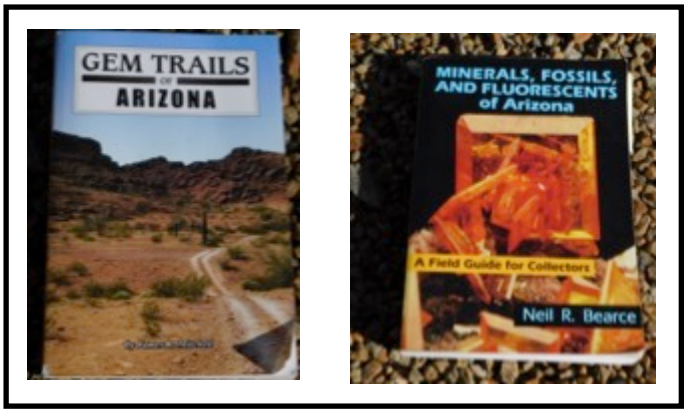
- The temperatures from October to March are quite moderate with sunny days and cool nights.

- There is sparse vegetation making it easier to spot minerals.

- There are 2 massive gem and minerals shows in January and February
  - Quartzite - hundreds of outdoor vendors
  - Tucson - the number of venues and dealers can be overwhelming

There is an old adage that I've heard in different forms over the years, the 5 Ps, "Proper Preparation Prevents Poor Performance." And it's true for a successful collecting trip.

Reference Materials



There are several books describing mineral locations and collecting in Arizona but the 2 best ones that I've found are Minerals, Fossils, and Fluorescents of Arizona by Neil R. Bearce, and Gem Trails of Arizona by James R. Mitchell. Bearce's book has good GPS coordinates, site difficulty scale, route descriptions, and site photos. Mitchell's book has GPS coordinates for the site general area, site and route descriptions, and maps.

After pouring over the different locations referenced in these books we typically make a list of the sites we would like to visit considering general location, difficulty, and minerals. We also do library and internet searches on these sites for more recent information.

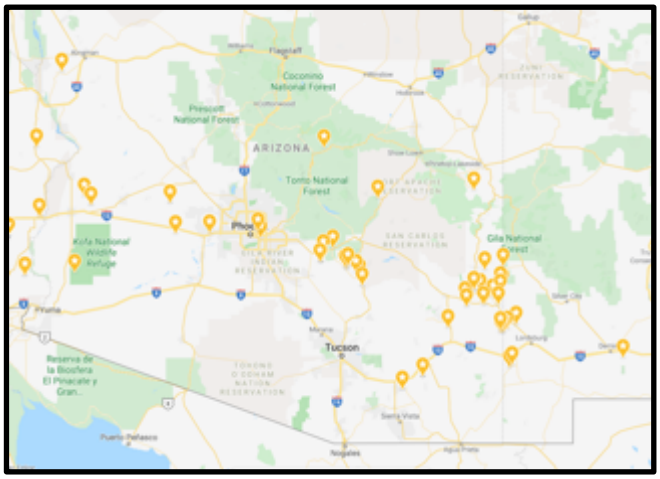
While internet searching, sometimes additional sites may pop up that look interesting and are added to the list. After gathering several collecting locations I use a spreadsheet to create a list that contains GPS coordinates, reference book page number, mineral, and any comments. Although GPS coordinates are a wonderful tool they are only approximations so I also look up the sites on Google Maps and Google Earth and try to pinpoint the exact locations as well as potential site routes.

Rockhound Site	Latitude, Longitude
Ash Peak Geodes	32°43'32.0"N 109°16'40.0"W
Barking Spider Mine	33°03'24.0"N 110°48'29.0"W
Big Horn Mtns Fluorite	33°42'42.0"N 113°17'52.8"W
Black Hills Rockhound Area	32°51'41.8"N 109°23'40.2"W
Carlisle Dumps.NM	32°51'04.0"N 108°57'57.4"W
Cinammon Geode Bed	33°23'27.6"N 114°59'02.6"W
Contact Mine Amethyst	33°44'21.0"N 113°02'16.0"W
Crystal Mine Gate	32°07'03.7"N 108°56'26.0"W
Crystal Mine Parking	32°07'09.5"N 108°56'41.4"W
Dragon's Teeth Quartz	32°00'01.4"N 110°00'33.2"W
Dragoon Marble Quarry	31°59'46.7"N 110°00'21.8"W
Duncan Fire Agate	32°26'22.2"N 109°02'48.0"W
Eagle Tail Mtns Site B	33°37'09.0"N 113°37'00.0"W
Granite Gap Mine	32°04'42.5"N 108°58'51.6"W
Grey Horse Mine Vanadinite	33°06'39.9"N 110°55'20.2"W
Hauser Geode Beds	33°22'34.0"N 114°59'23.0"W
Hull Road Chalcedony (fluorescent)	33°39'25.1"N 113°39'20.3"W
Joy Valley Fire Agate	32°33'22.2"N 109°20'15.6"W
Little Harquahala Mtns Chalcedony	33°39'19.8"N 113°39'16.8"W
Malachite @ Gold Hill Mine	34°09'06.4"N 113°48'56.7"W
Mammoth Mine Malachite	34°02'55.8"N 113°45'53.3"W
Moon Mtn Petrified Wood	33°48'55.8"N 114°24'00.0"W
Opal Hill Mine	33°27'11.1"N 114°51'53.7"W
Opal on State Rte 75	32°47'54.7"N 109°09'51.1"W
Plomosa Mountains Agate	33°43'28.8"N 113°59'00.0"W
Porphyry	32°29'37.2"N 109°42'29.9"W
Potato Patch Geodes	33°23'13.7"N 114°58'34.9"W
Potts Canyon Geodes	33°17'24.2"N 111°11'32.0"W
Ramsey Mine Fluorescents	33°37'34.9"N 113°58'32.0"W
Rnd Mtn Fire Agate	32°28'36.6"N 109°04'10.4"W
Road to Saddleback Mtn Chalcedony	33°26'14.9"N 112°57'57.7"W
St David Selenite Site 1	31°51'56.0"N 110°15'21.2"W
St. David Selenite Roses	31°51'38.0"N 110°15'20.3"W
Summit Mine, AZ	32°52'27.0"N 108°58'22.6"W
Sunrise Mine Fluorescents	32°05'21.0"N 108°58'05.0"W

Database of Potential Collecting Sites

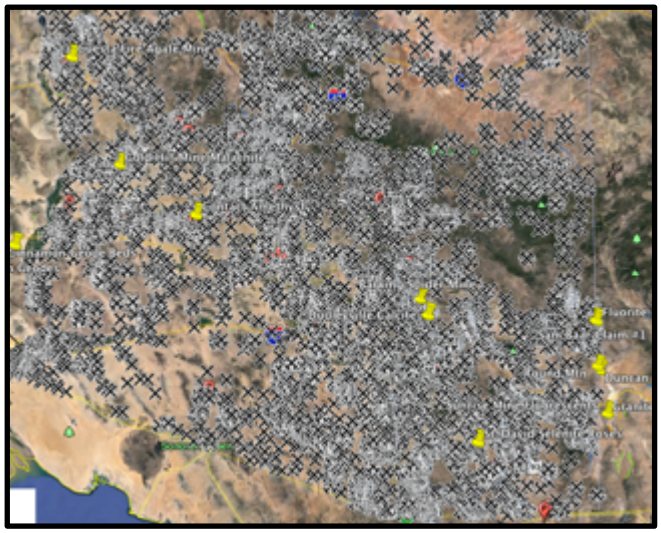
Both Google Maps and Google Earth can be personalized with markers for different locations. In addition to pinpointing sites on Google Earth the US Geological Survey has a plug-in database of

mineral resources and geological features that can be married with Google Earth. The database contains Quaternary Faults and historical mining claims.



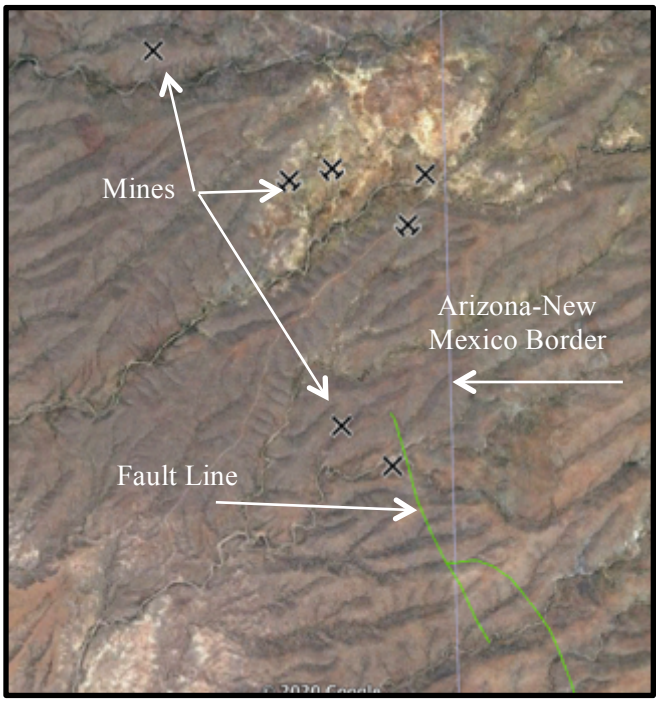
Google Maps Marked with Potential Collecting Sites

The picture below shows all the mining locations in Arizona along with my Google Map sites.



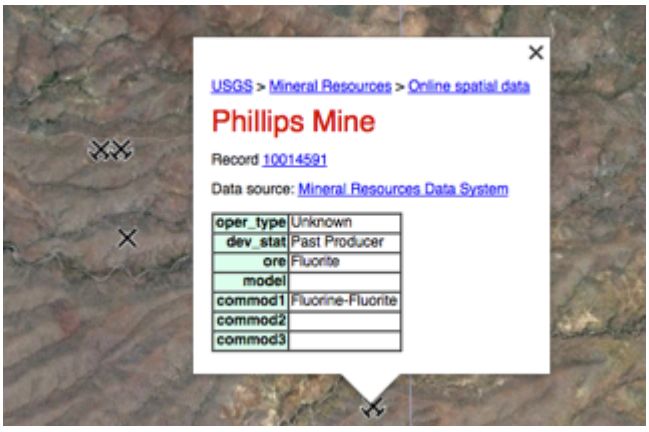
Google Earth with MRDS Mine Overlay

Zooming in on a particular area of interest you can see if there are any areas of interest that combine fault lines with old mining claims. For example, on the southeastern side of the state you can see a fault line running approximately north to south along with several old mines if you extend the fault line to the north.



Quaternary Fault with Fluorite Mines

By clicking on the mine symbol a small pop up appears with the name of the mine, and the minerals. In this instance the primary mineral was Fluorite. In fact all of the mines shown had Fluorite as the primary mineral.



Basic USGS Mine Information

Another click on the Record opens a new screen with a wealth of geologic and economic information on the specific mine.

Ore body information

Thickness	1.8M
Depth to top	0M
Width	9M
Length	18M
Area	8HA

Field	Value
Type of Orebody #1	FISSURE VEIN
Shape of Orebody #1	TABULAR
Primary mode of Origin	HYDROTHERMAL
Primary Ore Control	FRACTURING
Secondary Ore Control	FAULTING
Degree of Wallrock Alter.	SLIGHT
Type of Wallrock Alter. #1	SILICIFICATION
Strike And Dip	N05W
Minimum Depth to Top	0
Avg. Thick. Unconsol. Mat.	0
Min. Thick. Unconsol. Mat.	0
Total Surface Area (HA)	8
Date of Last Modification	780213

Ore Body Information

Although this technology is a great tool it still doesn't beat local word of mouth. We always try to contact or find someone in the area that has current information on where to go, where not to go, and what type of minerals might be found. During our last visit to Arizona we focused on this area and found a great resource with the owner of a local rock shop in Duncan, AZ. He was able to provide us with several locations to try. It was with this information that we were able to find some nice pieces of Fluorite.

A word of caution is appropriate here. Mining claims are continually filed and abandoned in Arizona so once a collecting site is identified it is worthwhile to make a trip to the county courthouse to see if your area of interest is currently claimed. As I mentioned above local rock shops can provide current information on where to go and where to not go. And lastly, we try to limit our collecting to BLM land, where we know collecting is allowed.

Purple and Green Fluorite
Duncan, AZ (5cm x 10cm)

Having potential collecting sites located Kathi and I make an initial itinerary detailing when we arrive, where we will be staying, which locations we will visit, driving times, etc. With a number of different collecting sites identified there are always options for changing in real time. If we visit a site and find that it is not accessible we can quickly divert to another site.

In the end of planning we always agonize over what collecting tools to bring considering air travel restrictions, how much weight and room our tools will take in our luggage. What we've recently done is go to the US Postal Service. They have a 12" x 12" x 6" flat rate box that costs $21 to ship and will fit a rock hammer, entrenching tool (shovel), chisels, hand claw, gloves, and a couple of canvas collecting bags. We ship it to the post office or motel where we will be staying and pick it up when we arrive. With weight not an object it is amazing what you can stuff in that size box.

Tools You Can Ship For a Flat Rate
(We actually stuff more than this in a single box)

Upon arrival in Arizona the priority is picking up plenty of water so a trip to a local Wal-Mart is the first stop. Although the temperatures may be in the 60s or 70s, the lack of humidity combined with the physical exertion of hiking and digging it is not unusual for both of us to go through a gallon of water in a day. Most of the collecting sites are miles from a paved road and don't have cell service so in the event you get stuck plenty of water is a necessity. While at Wal-Mart we also pick up some incidentals like sunscreen, first aid supplies, and snacks.

I must admit that by this time I'm ready to go collecting so next month I'll finish this article with some of the sites we've visited and minerals we've collected.

The Algodones Sand Dunes

The Algodones Sand Dunes

Just a few miles west of Yuma, AZ is a unique geologic area known as the Algodones Sand Dunes. Approximately 45 miles long (72 km) long by 6 miles wide the sand dunes were a significant barrier to east-west travel for several hundreds of year. They are thought to have been formed by repeated flooding and drying of the Salton Sink by the Colorado river.

During periods of flooding and with the flat topography that borders southeastern California and southwestern Arizona it was not unusual for the Colorado River to flood the area, in particular an area known as the Salton Sink creating Lake Cahuilla. The last Lake Cahuilla covered much of the Imperial, Coachella and Mexicali Valleys as late as 1450. Westerly winds moved the beach sands from the lake and deposited them in this area west of Yuma. It is a process that is still continuing today.

To Be Continued. Next Month: Collecting sites and material collected.