Place: **Union Hall**
Meyers Street
Next to Campus Life
In Kettle Falls

Time: 7:00 PM
Third Tuesday
Each Month
(Jan.-Nov.)

The Panorama Prospector

March 2010

Panorama Gem an Mineral Club Minutes for Feb 16th 2010

By Ginger Pitman

Our February meeting was attended by 40 people and 4 visitors. Snacks for the March meeting will be provided by Bob and Scott. Sylvia gave the treasurer's report. We are selling the black light raffle tickets and our club hats.

Stone Rose sent us information on The 10th Annual Art, Antique and Collectibles Auction to be held on Sat. April 24th at the Ferry County Carousel Building from 6-9pm. This is one way to support Stone Rose there are also memberships for families/ organizations and sponsorship levels and just plain going to the dig this summer.

Rex reported he has proposed 12 field trips for this summer, he asked if the club would be interested in some pay to dig sights. If so he would do the paper work. To give him your input and preferences email him at Rexnmabel@centurytel.net .

Panoramagem.com is the web site for our club. Joe has done a tremendous job, it is first class; everything about the club is there.

Bill gave a show report (which is coming fast) every thing is on track. We do need more people to fill cases. If you have some thing to show from the field trips or things you have worked on or just have an idea which goes with our theme do consider putting in a case. We need fresh ideas and no one is judging, we just want to see and enjoy your ideas. The theme for the show is "**Stories in Stone**". Our set up date is 8 am on Thurs March 25; show is Fri and Sat with take down at 5 pm on Sat night.

A report on the club shop was given; it is open noon to 6 the first and third Saturdays. Safety in the shop was discussed; we need some training and safety equipment. Please get help to get started; use goggles, aprons, dust masks when needed and be sure to sign

(continued on page 2)

Away from the Winter that Never Was

Pictures and Story by Bev Bockman

A visit to my sister, Janet, in Green Valley, AZ. was the focus of my journey, as we see so little of each other—and we squeezed a lot into the time we spent together. No rock hunting. Two days after my arrival we went to Oracle, north of Tucson, to a museum featuring pottery for sale from a village in Mexico called Mata Ortiz—where the entire village creates these pots from local clay and decorates based on ancient designs. Gorgeous!

Passing through Tucson on the way back we stopped for our first visit to part of the Gem Show and bought a crystal. (For any one who has not been to Tucson it is hard to explain a gem show that covers an entire city.) During the next week we went to the Gaslight Theatre for a riotous production of the Cisco Kid, went to Electric Park and the Holidome more than once. As Janet has a business license we went to 'wholesale only' places. In spare time visited Madera Canyon east of Green Valley.

Birds all over the place!! And saw all the amenities in the education and recreation centers —13 in all—that are available to residents of G.V. The pools are lovely, and the lapidary shops are

(Minutes from Page 1)
the waiver forms. The committee will try to set up some learning and demonstration classes. After the silent auction the program was presented by Johnie inspired by the trip to Bisbee, AZ to the copper country. Entitled "have you ever wondered" what the rocks containing ore go thru to get to the finished product to be used. He presented the flow chart of two copper circuits depending on the type of ore and one on uranium ore.

So be thinking of the fun things to do at the show; your cases and the field trips you want to go on.

Our club was saddened to hear of the death of NeNa Wright's husband Bill. He was a singer/song writer and had just finished an album named "Pot Licker" all the songs were written by Bill and sung by him and a few friends. I am enjoying my copy and they are available at The Flour Mill, House of Music, Colville Vet Office, Arden One Stop and Meyers Falls Market in KF all monies go to NeNa.

(end of minutes)

A Note from the Prez:

By Johnie Pitman

The nice warm weather makes one want to get out and do some rock collecting but the roads are soft and the higher elevations are still covered with snow. Spring is coming soon and so is our show. I hope you have thought about displaying some of your treasurers at our show. The displays do not need to be related to the show theme which is "Stories in Stone". With a little imagination any rock has a story maybe about its finder or its maker, or maybe about its history or what its going to become. Whatever your treasure is will make a good display as long as it is rock related.

It's also time to round up your fluorescent rocks to put in the fluorescent display at our show. They should fluoresce under long wave length light because we are not going to have the short wave lights in the display this year. They should also be marked with your name for easy identification so that they are returned to you at the end of the show.

(Bockman continued from page 1)
amazing. You can "play" from 6 AM to 10 PM every day. We went to a concert by the Tucson Symphony and saw first run movies .

[Marble Sculpture includes the piano – one piece]

The Tucson Club Gem Show at the Convention Center was awesome! Impossible to describe! It is on for 4 days and is huge! We spent most of one day and didn't ever get to see it all. The big attraction in one wing was the marble woman, carved out of a single huge block of white marble. The sculptor started at her head and worked down. She and the grand piano that she is seated on are all one piece. He was there, with his wife and daughter, signing autographs, and has displayed this work in 26 cities It is humbling to consider that human beings have created all these marvels of lapidary arts from the raw materials provided from the very structure of our planet. The minerals, the gems and jewelry and the fossils displayed were just unbelievable. Of course I took lots of pictures to show others, but I have indelible memories also. If it is worth remembering you really don't need a picture.

[Rhodochrosite Crystal on Quartz & Sulfides]

A Visit with Fred Rossman, Part III

Pictures and Story by Joseph Barreca

[A piece of gold ore that ran 50 oz. per ton]

"All that glitters is not gold" and more than that, most gold is not all gold. As it turns out, the gold used in jewelry is alloyed with many other metals for a variety of reasons, primarily color and strength. Strength is not a very helpful word in this context. Strength to bend without breaking is not the same as strength to retain a shape without warping. Strength to spring back after being bent is not the same as the strength to hold a cutting edge. So what exactly is going on within the heart of gold?

Beneath whatever you see on the surface of a metal, it is a crystal. Well millions of crystals to be more exact. How those crystals arrange themselves and behave in different situations has a lot to do with how they were formed under heat and pressure. The relation between temper and temperature is profound because it dictates how a metal goes from liquid to crystal. The slower that it cools, the more brittle it becomes, because the crystals have a chance to pack themselves very tightly together. So a piece of metal that cools slowly in the air is stiffer than one that is quenched quickly in water or oil. One that is cured even more slowly in an oven, would be even more brittle still.

An example of how this works with gold is the gold wire used for earrings. A lot of thin, cheap wire commonly used is 22 gauge. It is made by machines rapidly so that it cools quickly and is soft. Fred likes to use a thicker 19 gauge wire that does not cut an ear as easily. He anneals it a couple of steps before it is drawn down to a final size. Heating the wire with a torch and then plunging it into water (annealing), makes it more flexible and less likely to break while being worked. This combination of annealing and compressing the wire while drawing it through a draw plate with progressively smaller holes, makes a wire that will bend and spring back too.

[Knife blade forged by Bob Brothers]

[Close-up of that same blade showing the grain]

The blade in these pictures was forged from old logging cable. It was heated and pounded while cooling. Exposed steel was carbonized in the process making it harder (the raised ridges). The softer core steel makes it flexible. It can take a very keen edge and the ridges give it a kind of natural serration which makes it cut even more efficiently. Fred is going to mount jewels on either side of the hilt and fit it with a handle of ivory, probably with some carving for grip and decoration. Etching the blade in a weak solution of nitric acid will bring out the pattern and ionize the steel so that it resists rusting.

Simple chemical treatments like this help finish metal, create alloys and solder but they can also be very dangerous, especially with prolonged

exposure. Fred showed me a design for a workbench that had a vacuum fan connected to the back so that fumes and metal dust could be removed from the air and trapped in a filter. He also explained that washing your hands regularly, even wearing gloves, an apron and clean clothes is important to a jeweler's health. Lead in the solder, borax in the flux, silver and many other metals and mineral-bearing rocks are bad for your lungs and blood. The upside is that the collected dust is valuable. Jewelry bench workrooms collect their dust and send it out to be refined.

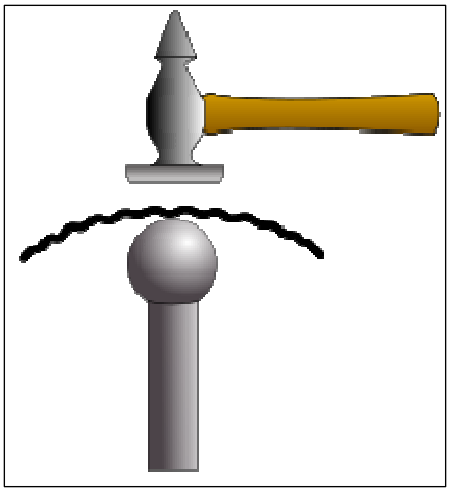
[Fred's Ring made from dental gold]

98% of the gold used by jewelers is recycled, only 2% is newly mined gold. This says something about how much abuse jewelry can take and the long term artistic value of most of it. Take for instance this very heavy gold ring that Fred wears. It is made from dental gold. The alloy for dental gold includes iridium and palladium. It is very tough. This ring weighs about .7 ounces. (Those are Troy ounces of course. Our normal weight system is avoirdupois which has 16 ounces to the pound. There are 14.5833 Troy ounces in a pound or 31.1034768 grams.) It is going to last a long time.

Type	Gold % wt	Silver %	Copper %	Colour
22 ct	91.6	8.4	-	Yellow
	91.6	5.5	2.8	Yellow
	91.6	3.2	5.1	Deep yellow
	91.6	-	8.4	Pink/rose
18 ct	75.0	25.0	-	Green-yellow
	75.0	16.0	9.0	Pale yellow, 2N
	75.0	12.5	12.5	Yellow, 3N
	75.0	9.0	16.0	Pink, 4N
	75.0	4.5	20.5	Red, 5N
14 ct	58.5	41.5	-	Pale green
	58.5	30.0	11.5	Yellow
	58.5	9.0	32.5	Red
9 ct	37.5	62.5	-	White
	37.5	55.0	7.5	Pale yellow
	37.5	42.5	20.0	Yellow
	37.5	31.25	31.25	Rich yellow
	37.5	20.0	42.5	Pink
	37.5	7.5	55.0	Red

24 carat gold of course is pure gold. There are actually many more alloys than those listed above and in addition to differences in color, they have differences in toughness that come from the metals and from the way they are handled.

When you hear of hammered gold, it is not just about what it looks like. The thinnest gold foil is still made by hand in India. Fred says that they put the original foil between two pieces of leather and a really big guy beats on it with a special hammer. In more ordinary circumstances, a jeweler often planishes a block of gold before rolling it to strengthen the exterior and avoid cracks. Planishing can also be used to flatten a piece. The dimpled look of many pieces of hammered metal reflects the value placed on both its beauty and strength.



[Planishing ball and hammer]

Repoussé is a technique for forming metal by hammering from within. It was taken to new heights in the 16th century by the Italian Benvenuto Cellini, sculptor, goldsmith, author, soldier and musician but also a hooligan and even avenging killer. His autobiography and treatise on goldsmithing are still good reading. They add an incredible dimension of story (provenance) to his few remaining works.

Chasing or embossing is the opposite technique, used to detail a piece of metal from the front. Fred hammers a ring first on its sides when expanding the size, then over the top for shape and strength. Timing is again important. Too much bending will crack metal. Metal tends to form spheres when melted. (Hence bird shot balls can be made by pouring lead through a screen atop a high tower.) When you heat borax flux on solder it turns dark at around 1100º. It turns clear at 1300º and is ready to use. If too hot it will entrain air and make a weak joint. With so much complexity in each small object, good jewelry is always a product of good temperament.

Rock Cycle continued

By Stephen Fox

Last month I clarified how to identify surface igneous rocks. You know, the stuff that comes out hot, runny, and sticky. It goes by the scientific name of Pahoehoe (runny) and Aa (blocky). A lot of igneous material pushes up into the crust of the earth without breaking onto the Earth's surface. There it cools slowly and will form larger crystals. The size of the crystals depend on how long the cooling process lasts. Cooling magma (what lava is called when it is still under the surface) will take up to millions of years to cool, down to a few years to cool. Naturally the crystals will vary in size because of the cooling rate, sometimes in the same rock, and depending on the chemical makeup it will take on different aspects. Now it's time to clarify.

[Granite – *pictures from Wikipedia Commons*]

Granite. That all encompassing great rock. When in doubt, call it granite, maybe. Granite is usually a gray color, except when it is pink, or white, or red, or mottled in any combinations of these colors. A granite is composed of quartz (at least ten percent), feldspar (pink/red- plagioclase, white-oglioclase), hornblende (black long or short prismatic crystals), mica as biotite (black, layered crystals) or mucovite (clear/gold layered crystals), or any combinations of these minerals. Granite can also contain apatite, sphene, zircon, magnetite, garnets, and a wide array of other minerals. Granodiorite is usually gray, and is mostly made up of plagiclase feldspars and is the commonest of the granite family. So when you are looking at a white/pink rock with crystals you can see arranged in a haphazard way it may be granite.

Granite pegmatite. (Seen Above) These are found in dykes, sills, veins, and some edges of a large intrusive. These produce very large coarse grained minerals, such as tourmalines, garnets, quartz crystals, beryl crystals, and other gemstones and minerals. When hunting for that elusive gemstone, they're usually hiding in a pegmatite.

Syenite. Basically it looks like granite, but more coarse, unless it is microsyenite which is not coarse and has large feldspar crystals. Then it doesn't look like granite at all. Except for its color, which is the same as granite.

Diorite. (Seen Above) It has a very speckled black and white color. Sometimes its dark green or pink with a lot of darker minerals which are very coarse. This is mostly a feldspar with hornblende and biotite. Other minerals associated with it are apatite, sphene, and iron oxides.

Grabbo, anorthosite, and troctolite. These three rocks are basically the same color, gray. They all have large, dark crystals, they may be layered, coarse grained, contain mostly feldspar, and I can't see one damned difference between any of them. Never could.

All the above look, feel, smell, and taste like granite. But there are other intrusives that don't look like granite. I'll cover some of them next month.