

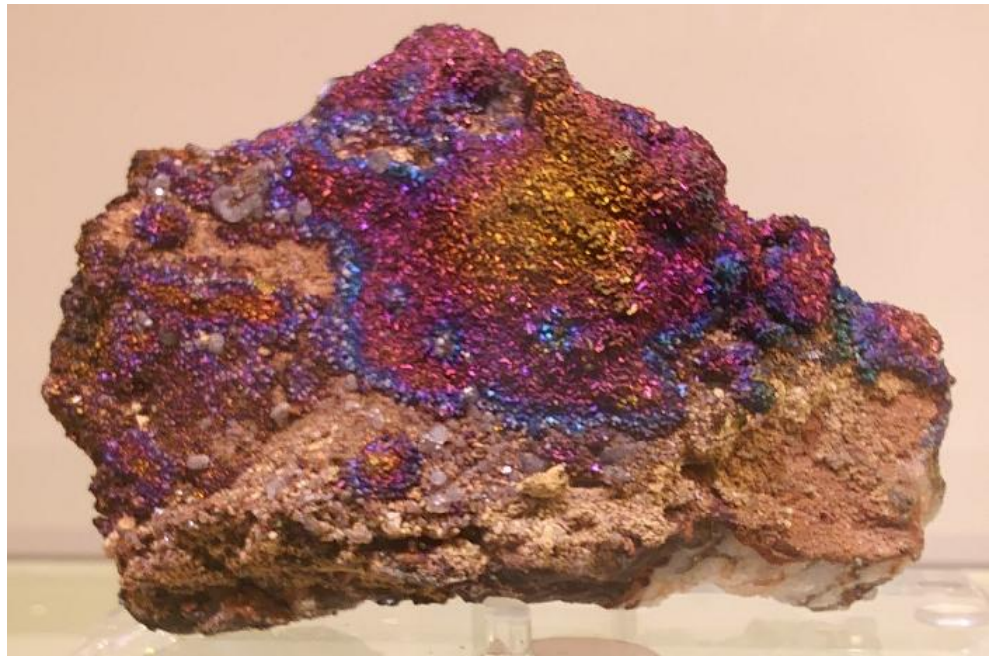


## Chalcopyrite

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

Have you ever been to the Martin Marietta Cement Quarry in Midlothian, Texas looking for pyrite? Have you ever picked up a reddish piece of Pyrite? If the answer to the second question was yes then you may have found Chalcopyrite (pronounced as kal-ko-pryite). As with the Pyrites, the Chalcopyrites from the Midlothian area are not of great specimen quality. In Midlothian, Chalcopyrite is quite rare compared to the Pyrite. Chalcopyrite is copper iron sulfide with a chemical formula of  $\text{CuFeS}_2$ . Pyrite is iron sulfide and has a chemical formula of  $\text{FeS}_2$ . Although they can look very similar, the two minerals can be easily identified by their Mohs hardness. Chalcopyrite has a hardness of 3.5 to 4.0 while Pyrite is harder at 6.0 to 6.5; a knife blade can easily scratch Chalcopyrite but not Pyrite.

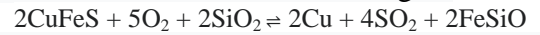
Chalcopyrite and Pyrite can have virtually the same appearance. Both present a brassy color with metallic luster. While both Chalcopyrite and Pyrite may have a similar appearance, the Chalcopyrite often oxidizes on the surface and presents a purplish iridescent appearance. Trace elements can cause the iridescence to appear red, green, blue, and a more intense reddish purple. This is often mixed with the shiny brass color of the un-oxidized Chalcopyrite. The iridescence can be utterly fantastic and is frequently sought for mineral specimens. However, the buyer should be aware that chalcopyrite could be treated with acids to cause it to oxidize and show the iridescence.



Chalcopyrite derives its name from the Greek word *chalkos* that means “copper” and *pyrites* that means “striking fire.” Chalcopyrite is often referred to as “yellow copper” or “yellow copper ore.” Other names that are or have been used include “copper pyrite”, “cupropyrrite”, and “yellow pyrite.” It has also been called “peacock ore,” but that name more properly describes the mineral bornite, another copper, iron and sulfate mineral.



Chalcopyrite's primary commercial use is as an ore for copper. It has been the most important copper ore for thousands of years. It can be roasted in with silica sand in open air or an oxygen rich atmosphere to produce copper, sulfur oxide, and iron silicate. The chemical formula for the roasting is:



It is easier to extract copper from Chalcopyrite than from copper carbonates such as Malachite or Azurite, or from copper silicates such as Chrysocolla; they must first be converted, generally by roasting, to a copper oxide and then reduced to pure copper.

Chalcopyrite is found in thousands of places throughout the world. Some of the most significant locations include Australia, Russia, China, Romania, Italy, Germany, France, Italy, England, United States, Mexico, and Canada. In the United States, the most significant locations are

Massachusetts, New York, North Carolina, Kentucky, New Mexico, and Washington. The largest deposit of nearly pure Chalcopyrite ever found was in Ontario, Canada.

#### References:

- Chalcopyrite, Mindat.org, <https://www.mindat.org/>
- Chalcopyrite, Minerals.com, <https://geology.com/minerals/>
- Chalcopyrite, Wikipedia, <https://en.wikipedia.org/wiki/>

Pictures: Both pictures by Don Shurtz of specimens displayed at Arkenstone Gallery of Fine Minerals

## A Special Thanks

A Special “**Thank You**” goes out to **Debbie Kitchens, the daughter of Bob and Jerrye Parker**. On behalf of Bob and the Parker extended family, Debbie has donated several flats of minerals specimens (mostly thumbnail specimens) along with a few cabochons, findings, and finished items to Pleasant Oaks Gem and Mineral Club. She advised that Bob is now in a memory care facility due to worsening dementia. The family is going to sell the residence in Wylie. They are keeping a lot of the better specimens and the rough rocks, but there just too many to keep everything. They have generously donated 21 flats, a couple filled with empty jewelry box, one or two with cabochons, findings, and few rough rocks, but the majority are mineral specimens. There should be enough mineral specimens to keep the raffle table happy for years.

If you search for our club history on our website, you will find an article by Bob Parker, with assistance from Jerrye Parker, describing the founding and the early years of the club. It turns out that Debbie actually got Bob and Jerrye interested in rockhounding. As with many kids, Debbie was always collecting rocks wherever she went. The interest rubbed off on the parents, and before long, they were members of a club. In time, they and a group of mineral loving friend founded Pleasant Oaks Gem and Mineral Club. Debbie was the first junior member of Pleasant Oaks.

## Safety Matters: Size Matters

By Ellory Borrow, AFMS Safety Chair  
From the June AFMS Newsletter



Size matters with safety masks and so does fit. While there is special concern about wearing safety masks due to the Covid-19 virus issues, we as rockhounds have numerous reasons for wearing masks.

Most of the mask use in our hobbies revolves around dust—dust from rock drilling, grinding dust, hammering dust, rock sawing dust. Most, but not all, of that dust may be controlled by keeping things wet. The rest may be mitigated by wearing a suitable dust mask. Another use for masks is with regard to chemical fumes. For fume mitigation, much more stringent requirements are made of masks and will be discussed in a future Safety Matters article.

The reason for this timely mask story relates to our hobby but perhaps more importantly is in regard to the Covid-19 virus problem. Not all masks are the same, so how we select, use, and wear the mask makes a difference. For use in our hobby activities, and for all intents and purposes, most dust masks well match the tasks we regularly face.

Virus protection masks require numerous additional considerations. Is one concerned about inhaling air containing droplets, particles, or some carrier of a Covid-19 virus? Is one concerned with exhaling air with particles which may, unknowingly, carry the Covid-19 virus? How long will we need to wear the mask? What is the proximity to possible virus issues? We need to make decisions about what we want the mask to accomplish. Masks being used for Covid-19 include surgical masks, N-95 masks, painters masks, dust masks, VOC masks, many, many types of home-made masks, as well as ski masks, scarves pulled over face, kerchiefs, sleeved arm held across mouth and nose. Well, books can be written about all those options. For now it is wise to, if one can find masks in the store, read the information on the mask's packaging and select a mask suitable for virus

mitigation. Virus are indeed very small however, the particles they ride on are generally quite a bit larger in size. It is currently thought safe to use N-95 masks; the others offer varying degrees of protection depending upon one's needs. Please check trusted sources for information on mask types, use, and recommendations.

With the common use of N-95 masks there too are issues to be addressed. Actually, many of the other mask options have similar issues. Is the mask the right size? Size does matter. For a small face, such as with children, the N-95 may not fit sufficiently well to offer suitable protection. A mask's fit around the contours of the nose can be a problem area. Many of the better masks have special spongy sealing foam to seal around the nose. Some masks have a thin metal strip which can be pressed around the nose to contour the mask and ensure a proper fit around the nose. If air is moving in or out around the mask edges, especially in the nose area the mask's effectiveness is greatly reduced. If one's glasses are being fogged while wearing a mask, that is a classic sign the mask's fit is not as effective as it should be. A hand moved close to the mask's perimeter can be used to detect air leaks around a mask. The breeze of moving air can easily be detected by one's hand as it is moved around the mask as one is breathing in and out.

The take-a-ways are: one needs to select a suitable mask for the task; and the mask's size and fit must also be correct.

Sources of additional information include:

WHO - World Health Organization  
CDC - Center for Disease Control  
NIH - National Institute of Health  
NIAD - National Institute of Allergies and Infectious Diseases

Checking with the above sources, as well as your own personal and trusted sources, plus your state and local sources, would be wise in order to have the most current safety mask advice.

Your safety matters. Please be extra cautious in this current Covid-19 virus day and age.

### VISIT AN AREA CLUB

[Arlington Gem & Mineral Club](#), meets the 1st Tuesday of each month at 7:30 pm, 1408 Gibbins, Arlington, TX  
[Cowtown Gem, Mineral, & Glass Club](#), meets the 2<sup>nd</sup> Tuesday at 7:00 pm, CERA 3300 Bryant Irvin Rd. Fort Worth  
[Dallas Bead Society](#), meets 1<sup>st</sup> Saturday of each month at 10:00 am at The Point at CC Young, 4847 W. Lawther Dr., Dallas, TX  
[Dallas Gem & Mineral Society](#) meets the 3<sup>rd</sup> Tuesday of each month at 7 pm, American Legion, 10205 Plano Rd, Dallas (next to their shop)  
[Dallas Paleontological Society](#), meets 2<sup>nd</sup> Wed. of each month at 7:00 pm, Brookhaven College, Building H, 3939 Valley View Lane, 75244  
[Fort Worth Gem & Mineral Club](#), meets 4<sup>th</sup> Tuesday of each month at 7:30 pm, 3545 Bryan Avenue, Ft. Worth  
[Oak Cliff Gem & Min Soc.](#), meets the 4<sup>th</sup> Tuesday of each month at 7:30 pm, Unitarian Universalist Church, 3839 W. Keist Blvd, Dallas,  
[Pleasant Oaks Gem & Mineral Club](#), meets the 1<sup>st</sup> Thur. of each month at 7:30 pm, Garland Women's Activities Bldg., 713 Austin, Garland  
[Wild West Bead Society](#), meets 3<sup>rd</sup> Tuesday of each month at 6:30, Wild Beads, 2833 Galleria Dr., Arlington, TX

## Shows and Activities – Upcoming Show and Activity Dates

Please note that many shows are being canceled in response to health concerns associated with COVID-19

Check with the show contact to verify the show status

- JUL 11-12, Tulsa, OK, Tulsa R&MS, Tulsa County Fairgrounds, [www.tulsarockandmineralsociety.org](http://www.tulsarockandmineralsociety.org)
- AUG 1-2, Lubbock, TX, Lubbock G&MS, Lubbock Memorial Civic Center, [www.lubbockgemandmineral.org](http://www.lubbockgemandmineral.org)
- AUG 7-9, Dallas, TX, International Gem and Jewelry Show, Market Hall (north hall), <https://www.intergem.com/>
- AUG 8-9, Gonzales, LA, Baton Rouge G&MS, Lamar Dixon Expo Center, [www.brgemandmineral.org](http://www.brgemandmineral.org)
- AUG 15-16, Bossier City, LA, ARK-LA-TEX G&MS, Bossier City Civic Center, [www.larockclub.com](http://www.larockclub.com)
- AUG 21-22, Tahlequah, OK, Tahlequah R&MS, Cherokee Community Building, [rockhoundsally@aol.com](mailto:rockhoundsally@aol.com)
- AUG 22, San Antonio, TX, Southwest G&MS, Wonderland of the Americas Mall, <http://www.swgms.org>
- AUG 29-30, Fort Worth, TX, Fort Worth G&MS, Will Rogers Memorial Center, [www.forthgemandmineralclub.org/](http://www.forthgemandmineralclub.org/)

Ref:

- May - June 2020 SCFMS News
- Rock & Gem Show Dates, <https://www.rockngem.com/ShowDatesFiles/ShowDatesDisplayAll.php?ShowState=ALL>

### Bench Tips from Brad Smith

Reprinted by permission of the author, Brad Smith. Received as an email from Brad Smith

#### SHEET & WIRE STORAGE

The more you work with jewelry, the more problems you have finding the piece of metal you need. My pieces of sheet were generally stored in various plastic bags, and the wire was in separate coils. Few were marked, so it often took me a while to locate that piece of 26 gage fine sheet I bought last year, especially since I usually take my supplies back and forth to classes.



A tip from a friend helped me organize everything. I bought an expanding file folder from the office supplies store (the kind that has 13 slots and a folding cover) and marked the tabs for each gauge of metal I use. Then I

marked all my pieces of sheet with their gauge, put them in plastic bags, marked the gauge on the bag, and popped them into the folder. I usually store coils of wire loose in the folder, but they can also be bagged if you prefer. I use one tab for bezel wire and one for the odd, miscellaneous items.

The resulting folder is really convenient when I want to take my metal out to a class or workshop, and it's colorful enough for me to easily find in the clutter of the shop!

#### LITTLE BALLS

I often use little balls of silver and gold as accent pieces on my designs. They can be made as needed from pieces of scrap. Cut the scrap into little pieces, put them on a solder pad and melt them with a torch. Then throw the balls into a small cup of pickle.



If you need to make all the balls the same size, you need the same amount of metal to melt each time. The best way to do that is to clip equal lengths of wire.

But there's an easier way to get a good supply of balls. Some casting grain comes in near perfect ball form. Just



grab your tweezers and pick out the ones you need. When you need larger quantities of balls, pour the casting grain out onto a baking pan, tilt the pan a bit, and let all the round pieces roll to the bottom. Bag the good ones, and pour the rest back into your bag for casting. Balls can be sorted into different sizes using multiple screens.

#### Work Smarter & Be More Productive With Brad's "How-To" Jewelry Books

[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)



## PRESIDENT'S MESSAGE

Ling Shurtz, POGMC President

Our July meeting will be a Potluck Dinner. Bring a dish to share. The club will provide Brisket and Honey Ham. The IGEM show is scheduled for August 7 – 9 at Market Hall in the North Hall meaning a smaller show. Tickets will be distributed when they are available. Leftover tickets from the canceled April show are still good and will be available at the July meeting. Set-up for the show is expected to be Thursday, August 6.

## CLUB OFFICERS FOR 2019

President:	Ling Shurtz
1st VP, Programs:	Carolyn Grady
2 <sup>nd</sup> VP, Field Trips:	Open
Secretary:	Lee Elms
Treasurer	Del Grady
Editor:	Don Shurtz
E-mail:	don.shurtz@gmail.com, L.SHURTZ@gmail.com

## MEETING MINTUES

POGMC President Ling Shurtz called the June 4, 2020 club meeting to order at 7:30 pm.

We all recited the Pledge of Allegiance to the Flag

Quorum: We have a quorum.

Sunshine Report:

- Jerrye Parker pass due to an automobile accident in February
- Butch Mitchell passed due to complications from a heart attack
- Patti Mitchell is at a Nursing home in Garland

Visitors: There were no visitors

Minutes: We reviewed the minutes of the March meetings as printed in the April 2020 Chips and Chatter. Carolyn made a motion to accept the minutes. Cheryl seconded the motion. *The motion passed.*

Treasurer's Report: Del Grady gave Treasurer's Reports for February through May. Don made a motion to accept the Treasurer's Reports. Lee seconded the motion. *The motion passed*

Old Business: There was no old business

New Business:

- IGEM has a Dallas Show scheduled for August 7 – 9. Hopefully we will have tickets available at the July meeting. The April IGEM tickets should also be good. April tickets are available at the front on the room.

*Chips and Chatter*

Pleasant Oaks Gem and Mineral Club of Dallas, TX

- July 2nd meeting: July 4th is on Saturday. No schedule of celebration activities were found on City website. The Parks and Recreation website indicates date TBD, but location is Central Park (about ½ mile SW of Activities Building). After discussion, we decided to do a Potluck Dinner at the Garland Activities Building for our next meeting with the club providing the Brisket.

Area shows (note that dates subject to change or show cancellation):

- JUN 20-21, Grapevine, TX, Arlington G&MC, Grapevine Civic Center, [www.agmc57.org](http://www.agmc57.org)
- JUL 11-12, Tulsa, OK, Tulsa R&MS, Tulsa County Fairgrounds, [www.tulsarockandmineralsociety.org](http://www.tulsarockandmineralsociety.org)

Break:

Presentation: We viewed an entertaining video from the Great Course series about the Dead Sea. The Dead Sea is one of the saltiest bodies of water in the world. It is currently about 8.5 times saltier than the ocean, but the salinity varies as the lake level changes. It is fed primarily by the River Jordan. It is land-locked and its coastline has the lowest elevation in the world, about 1,410 feet below sea level. Today the Dead Sea is a major visitor attraction and health spa. The Dead Sea is also a major health research and treatment center. Amongst the reasons for the health research and treatment facility are the mineral content of the water, the low level of pollens and allergens, higher atmospheric pressure, and lower ultraviolet radiation levels.

Ling adjourned the meeting at 8:20 pm.

## MEETING

Our July 2<sup>nd</sup> meeting will be a Potluck dinner at the normal meeting location. Starting time will be 7:00 for social interchange with dinner starting at 7:30. Everyone should bring a dish to share (appetizer, salad, side, or dessert). In the past, parking has been an issue due to Fourth of July activities, but hopefully not this year.

Our August 6 meeting will be at the Garland Activities Building and will start at 7:30 PM.

## VISITORS ARE ALWAYS WELCOME

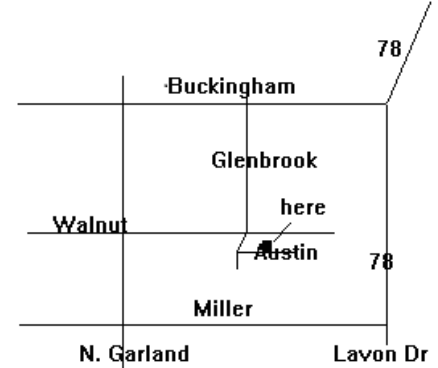
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**PLEASANT OAKS GEM and MINERAL CLUB of Dallas**



Meetings  
 First Thursday of each month, 7:30 PM  
 Garland Women's Activities Building  
 713 Austin St., Garland, TX  
 (Northeast corner of Austin & Glenbrook)

Membership  
 Single Adult: \$16.50,  
 Junior: \$5.00, Family: \$27.50  
 (Plus badge fee for new members)



**PURPOSE:** The Pleasant Oaks Gem and Mineral Club of Dallas is organized for charitable and educational purposes to promote interest in the various earth sciences, particularly those hobbies dealing with the art of cutting and polishing gemstones, the science of gems, minerals and metal crafts, as well as their related fields. Pleasant Oaks Gem and Mineral Club of Dallas is a Section 501(c)(3) not-for-profit organization

CHIPS AND CHATTER  
 Pleasant Oaks Gem & Mineral Club  
 PO Box 831934  
 Richardson, TX 75083-1934

To:

**VISITORS ARE ALWAYS WELCOME**

**The July meeting will start at 7:00 PM at the Garland Activities Building  
 We will have a Potluck BBQ Dinner, Brisket and Ham provided by the club  
 Bring a dish (appetizer, salad, vegetable, dessert) to share**

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