Pleasant Oaks Gem & Mineral Club of Dallas, TX
Chips and Chatter

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1st Place, 2018 SCFMS Mini-Bulletin
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1st Place, 2017 SCFMS Mini-Bulletin

Moganite, a Polymorph of Quartz

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

In the May 2018 issue of the Chips and Chatter we started a discussion of the quartz family. In this article we will explore Moganite, a moderate temperature forming member of the quartz family. As a member of the quartz family it has a chemical composition of silicon dioxide, SiO_2. While most quartz forms in the triagonal crystal system, moganite forms in the monoclinic crystal system. To picture the monoclinic crystal system, think of a rectangular base and top (with 90º angles but the two legs are unequal in length), then form it into rectangular prism with the lines joining the top and bottom not being 90º angles. The top and bottom remain parallel, but displaced in the third axis. The Mohs hardness of moganite is 6.

Moganite was not identified until 1984. In 1994 the International Mineralogical Association (IMA) disapproved morganite as a unique mineral because it is not clearly distinguishable from quartz. In 2007 the Commission of New Minerals, Nomenclature, and Classification (a part of the IMA) approved moganite as a valid mineral. Considering how long quartz has been known to geologists and scientists, it is amazing that a unique varitiety would not be recognized until relatively recently!

Moganite is rarely found as a pure moganite crystal. It was initially found in the Mogan Formation on Gran Canaria (Grand Canary) Island, Spain. Moganite has since been identified in other localities including the United States (California, Colorado, and Pennsylvania).

Morganite is more commonly found growing in micro-crystalline quartz materials of chalcedony. Chalcedony includes agate, adventurine, carnelian, chrysoprase, heliotrope, moss agate, mtorolite, and onyx. Chalcedony may contain up to 50% to 70% moganite, but the moganite content generally decreases as the formation temperature decreases. Agates are typically 5% to 20% moganite. It can only be identified by crushing the chalcedony to a powder and then subjecting it to Raman or X-Ray Diffraction analysis. It is surprising that chalcedony has been known for a long time, but it was only relatively recent that it was found to contain moganite. The name chalcedony comes from Latin *chalcedonius* and was used by Piney the Elder in his "Naturalis Historia" and possibly from the Greek *khalkedon* which was used in the "Book of Revelations" from the Bible.

Reference:

- Gemdat.org, https://www.gemdat.org/
- MIEHE; GRAETSCH; Crystal structure of moganite: a new structure type for silica
- Mindat.org, https://www.mindat.org/
- https://www.researchgate.net/publication/257012764_Crystal_structure_of_moganite_A_new_structure_type_for_silica
- Moganite – A Common Mineral with a Disapproved Name, https://minds.wisconsin.edu/bitstream/handle/1793/48107/Moganite.pdf?sequence=1
- PARTHASARATHY; KUNWAR; SPINIVASAN, European Journal of Mineralogy, 2001, Occurrence of moganite-rich chalcedony in Deccan flood basalts, Killari, Maharashtra, India,
- Wikipedia, https://en.wikipedia.org/wiki/Moganite

Picture:

- Photo by Bergminer, used under CCASA 4.0 International, Wikimedia, https://commons.wikimedia.org

Shows and Activities – Upcoming Show and Activity Dates

- Nov 3 – 4, Odessa, TX, Midland G&MS, Ector County Coliseum, mgmstx@gmail.com
- Nov 9 - 11, Houston, TX, Houston G&MS, Humble Civic Center, www.hgms.org
- **Nov 17-18, Mesquite, TX, Dallas G&MS, Mesquite Rodeo Center Exhibit Hall, www.dallasgemandmineral.org**
- Jan 11 – 13, 2019, Dallas, TX, IGEM, Market Hall, https://www.intergem.com/all-upcoming-shows/, club show set-up on Wednesday, January 9, 2019
- **Jan 19 - 20, 2019, Fredericksburg, TX, Fredericksburg Rockhounds and SCFMS Convention, Lady Bird Johnson Park**
- Jan 25 – 27, Tyler, TX, East Texas G&MS, Tyler Rose Garden Center, www.etgms.com/annual_show.html

Ref:

- July - August 2018 SCFMS Newsletter
- Rock & Gem Show Calendar, http://www.rockngem.com/show-dates-display/?ShowState=ALL

Scientists Find Way to Make Mineral Which Can Remove CO2 From Atmosphere

by Kreigh Tomaszewski via Rockhounds@drizzle.com

Scientists have found a rapid way of producing magnesite, a mineral which stores carbon dioxide. If this can be developed to an industrial scale, it opens the door to removing CO2 from the atmosphere for long-term storage, thus countering the global warming effect of atmospheric CO2. This work is presented at the Goldschmidt conference in Boston.

Scientists are already working to slow global warming by removing carbon dioxide from the atmosphere, but there are serious practical and economic limits on developing the technology. Now, for the first time, researchers have explained how magnesite forms at low temperature, and offered a route to dramatically accelerating its crystallization. A ton of naturally-occurring magnesite can remove around half a ton of CO2 from the atmosphere, but the rate of formation is very slow.

Project leader, Professor Ian Power (Trent University, Ontario, Canada) said: "Our work shows two things. Firstly, we have explained how and how fast magnesite forms naturally. This is a process which takes hundreds to thousands of years in nature at Earth's surface. The second thing we have done is to demonstrate a pathway which speeds this process up dramatically"

The researchers were able to show that by using polystyrene microspheres as a catalyst, magnesite would form within 72 days. The microspheres themselves are unchanged by the production process, so they can ideally be reused.

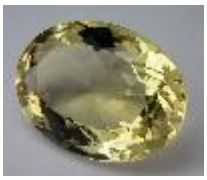
Read more at: https://phys.org/news/2018-08-scientists-mineral-co2-atmosphere.html#jCp

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 2nd Tuesday at 7:00 pm, CERA 3300 Bryant Irvin Rd. Fort Worth
Dallas Bead Society, meets 1st 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 3rd Tuesday of each month at 7 pm, American Legion, 10205 Plano Rd, Dallas (next to their shop)
Dallas Paleontological Society, meets 2nd Wed. of each month at 7:00 pm, Brookhaven College, Building H, 3939 Valley View Lane, 75244
Fort Worth Gem & Mineral Club, meets 4th Tuesday of each month at 7:30 pm, 3545 Bryan Avenue, Ft. Worth
Oak Cliff Gem & Min Soc., meets the 4th Tuesday of each month at 7:30 pm, Unitarian Universalist Church, 3839 W. Keist Blvd, Dallas,
Pleasant Oaks Gem & Mineral Club, meets the 1st Thur. of each month at 7:30 pm, Garland Women's Activities Bldg., 713 Austin, Garland,

November's Birthstone Citrine

Anita Dresner, from the November 2011 Chips and Chatter



Citrine is believed to help the heart, kidney, digestive tract, liver and muscles. It promotes creativity, helps personal clarity and eliminates self-destructive tendencies. The gemstone Citrine is the official birthstone for the month of November as adopted by the American National Association of Jewelers in 1912. It is also the Planetary stone for the Sun Sign of Virgo and the accepted gem for the 13th and 17th wedding anniversary. See the birthstone tables for additional references to this stone or citrine jewelry.

Citrine is a variety of quartz ranging in colors of yellow, yellow-brown, orange, dark orange-brown, reddish-brown. Citrine crystals can form together with amethyst to form a bi-colored quartz called ametrine. Almost all citrine that is available on the market today is heat-treated amethyst. Natural citrine is pale yellow to pale orange, much lighter than the heat-treated material which is dark orange-brown to reddish- brown. All of the heat-treated material has a red tint, while natural citrine does not. Some amethyst deposits have been found where the amethyst was changed naturally by high temperatures to brown citrine.

Most citrine comes from Brazil, but almost all of the Brazilian material is heat-treated amethyst. Natural citrine can also be found in the Ural Mountains of Russia, in Dauphine, France, and in Madagascar. The inexpensive low grade amethyst is heated at high temperatures to produce the popular orange, reddish and sherry colored citrine. Darker colors are considered more valuable, including the medium golden orange and dark sherry- colors. Citrine may be mistaken for the more expensive orangish-yellow topaz and, at times, may be sold as topaz by dishonest gemstone vendors. Due to this, citrine buyers are sometimes suspicious of any citrine and think it may actually be fake topaz. Citrine is a 7.0 on the Mohs scale of hardness.

Reference: http://www.bernardine.com/gemstones/citrine.htm
Picture: by von de:Wela49, used by GNU Free Documentation License, Wikimedia, https://commons.wikimedia.org/

November's Birthstone Topaz

Don Shurtz, Pleasant Oaks Gem and Mineral Club of Dallas

Do you think you are insane / crazy? Have no fear; Topaz will clear up the condition in seconds. Well, maybe not, but it was an English superstition that Topaz would cure lunacy.

The second birthstone for November is topaz. Topaz comes in a rainbow of colors, but most sites hold that yellow topaz is the second birthstone for November. More recently many sites are also showing blue topaz pictures when identifying the November birthstone. The name topaz is derived from the Old French word *Topace* and the Latin word Topazus and translates as "yellow stone" and may be related to the Sanskrit word *Tapas* which means fire. In Biblical times, any clear, yellow stone was called a topaz; this included yellow chrysolite and yellowish olivine. However, it did not include the stone we now know as topaz – there were no know sources for the mineral in that part of the world. Topaz was not identified as a unique mineral until 1652. If you look at the pictures on this page, you can see how similar in appearance yellow topaz is to citrine.

Topaz is classified as a nesosilicate and has the formula $Al_2SiO_4(F,OH)_2$. Topaz is the defining mineral for Mohs hardness 8. Most topaz is mined in Brazil. It is also found in the Ural Mountains, Afghanistan, and the United States. Colorless to light blue topaz can be found in Mason County, Texas and is the Texas state gemstone.

Reference: Topaz, Wikipedia, https://en.wikipedia.org/wiki
Picture by Mauro Cateb, used by CCASA 4.0 International License, Wikimedia, https://commons.wikimedia.org

A NOTE FROM ROGER

By Roger Burford, SCFMS President , from the October – November SCFMS Newsletter

Well summer is almost over and, with hope in our hearts, we will be able to soon get out and do some serious rock hounding again. All areas of our federation have been hit with record heat and when it hasn't been too hot to get out it seems that it has been raining and in so many areas too much rain. Conditions can and will get better. The rock hounding hobby seems to be becoming more popular too, in Louisiana at least, if the attendance at the Baton Rouge and Bossier City gem and mineral shows are any indicator. Both shows had record attendance and the Baton Rouge society gained quite a few new members. From what I have heard from the vendors at these shows, it is true in other areas of the federation

This is also the time of year for all of our clubs to send in their payments to the federation and for the insurance. All payments were due by the end of September so please remind your treasurer to get in those payments soon if you have not already.

GEOLOGY IN THE NEWS

Reports Spotted by Jim Brace-Thompson in Recent Newspapers
From September 2018 Rockhound Ramblings, Ventura (CA) Gem and Mineral Society

A Heavenly Wind Once Flew over Utah. On August 13, in the journal "Nature, Ecology & Evolution," scientists announced the discovery in northeastern Utah of the oldest pterodactyl, which they have named Caelestiventus hanseni, or "Heavenly Wind." How old is old? 210 million years. This pushes the age of the first known flying vertebrate back by some 65 million years, into the Triassic Period. With a 5-foot wingspan, big fangs, and a pelican-like pouch, Heavenly Wind was well advanced, indicating still earlier pterodactyls are out there, just waiting to be dug up and freed to fly in a heavenly wind once again!

Biggest Earthquake in a Century Rocks Venezuela. Another Hits Japan. August 21 saw the most powerful earthquake to strike Venezuela since 1900. Although the 7.3 magnitude quake was felt across the country (indeed, across much of northern South America and the Caribbean), the quake was centered 53 miles below ground. This helped minimize surface shaking and thus minimized damage. While buildings shook and items fell from store shelves, there were no immediate reports of casualties or major damage, even while the rocking continued with a 5.7 aftershock the following day. Meanwhile, even as I type, reports are coming in of a magnitude 6.7 quake rocking Japan's northern island of Hokkaido, setting off huge landslides and cutting power throughout the island on September 6. More details to come…

A Peak Is Piqued in Sweden. Sweden has a massif called Kebnekaise (pronounced keb-na kais-a) that sports two peaks, a glacier-covered southern peak and a glacier-free northern peak. That southern peak has stood proud as the tallest peak in all Sweden. One measurement not so long ago put it at 6,893 feet above sea level as compared against the 6,879-foot northern peak. However, the exact height of the southern peak has always been variable because of the glacier atop it. (Google "Kebnekaise" and you'll get all sorts of conflicting measurements, sometimes within the same article!) A record heat wave this summer, though, has caused pique among lovers of the southern peak. One updated measurement put it at 6,880 feet, and some estimate it's even lower and thus may have lost its title as Tallest Peak in All Sweden. But fear not! Winter snows may help it bulk back up to fighting form to regain its title.

Fireball from Space Lights up Turkeytown! An asteroid estimated to be 6 feet in diameter created a fireball 40 times brighter than a full moon that lit up the sky above Turkeytown, Alabama around midnight on August 17. The big space rock, traveling at 53,700 mph, set off NASA sensors and was captured on security cameras across Alabama before disintegrating above the town of Grove Oak. While meteors are a fairly common sight in the night sky, ones of this size are unusual—and dangerous, should they touch down in one piece!

Detecting Earthquakes on the Ocean Floor. While installing earthquake sensors is relatively easy on dry land, most of the Earth's surface is under oceans. Without a system of sensors, how might we detect and gauge earthquakes under water that could result in tsunamis or damage from shaking on dry land? Per the August 3 issue of the journal Science, one group of researchers has detected seismic waves via existing underwater fiber optic cables being used for telecommunications. Laser lights sent through such cables have shown effectiveness in detecting even very small strain changes, such as those caused by seismic waves. So it would seem to turn out that we've already populated our ocean floors with seismic sensors after all. We just needed to learn how to read them!

Editor's Note: Items from this article have been omitted in order for the article to fit in available space.

PRESIDENT'S MESSAGE

Ling Shurtz, POGMC President

The October IGEM show is over. It was slow on Friday but improved on Saturday and Sunday – overall a good show. The next IGEM show will be January 11 – 13 at Market Hall; club set up will be on Wednesday, January 9. At our November meeting we will install the officer for 2019. We also need to discuss plans for the December meeting.

CLUB OFFICERS FOR 2019

President:	Ling Shurtz
1st VP, Programs:	Carolyn Grady
2nd 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

The October 4, 2018 club meeting was called to order at 7:30pm by Ling Shurtz.

The Pledge to the flag was led by everybody.

Quorum: We have a quorum

Sunshine Report: Patti is in the Parkland Intensive Care unit. Butch is still having health issues also.

Minutes: The minutes of the September meeting as printed in the September Chips and Chatter were discussed. A motion to accept the minutes was made by Hat and seconded by Carol. The motion passed.

Treasurer's Report: Del Grady gave the Treasurer's Report. A motion to accept the Treasurer's Report was made by Cheryl. The motion was seconded by Hat. The motion passed.

Old Business: IGEM set up will be on Wednesday, Oct.10th. Plan to arrive shortly after 12:00 noon.

New Business:

- Report of the Nominating Committee: President- Ling Shurtz, First Vice President- Carolyn Grady, Second Vice President- Open, Secretary- Lee Elms, Treasurer- Del Grady, Editor- Don Shurtz
- Nominations from the floor: None.
- Election of Officers for 2019: The slate of officer presented by the Nominating Committee was accepted by acclimation.

Regional Shows:

- Oct 5-7, Albuquerque, NM, Jay Penn, NM State Fairgrounds,
- Oct 12-13, Mount Ida, AR, Mount Ida Chamber of Commerce, Montgomery County Fairgrounds, 31st Annual Amateur World Championship Quartz Digging Contest
- Oct 13-14, Amarillo, TX, Golden Spread GM&TS, Amarillo Civic Center
- Oct 13-14, Temple, TX, Tri-City G&M Mayborn Civic Center
- Oct 19-21, Austin, TX,
- Oct 19-21, Houston, TX, IGEM Show,
- Oct 27-28, Oklahoma City, OK, Oklahoma City M&G, Oklahoma State Fair Park,
- Nov 17-18, Mesquite, TX, Dallas G&MS, Mesquite Rodeo Center Exhibit Hall,

New Business from the floor: None

Break

Presentation: The Secret world of Ruby and Sapphires from the 2017 Dallas Mineral Collecting Symposium DVD.

Raffle: We had the raffle.

The meeting was adjourned at 9pm.

Respectfully submitted,
Lee Elms, Secretary

MEETING

Our next meeting will be November 1, 2018 starting at 7:30 PM. We will be viewing a presentation from the 2017 Dallas Mineral Collecting Symposium, The Color of Minerals by Dr. George Rossman. Come and find out why your amethyst is purple.

SHOW AND TELL

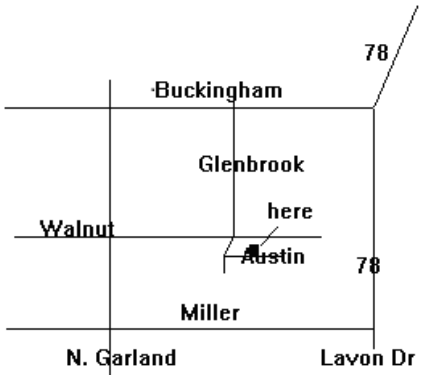
Bring a birthstones for November, Citrine or Topaz. Also, bring a stone containing Moganite (a member of the Chalcedony family, agate, adventurine, carnelian, chrysoprase, heliotrope, moss agate, mtorolite, or onyx.

VISITORS ARE ALWAYS WELCOME

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

Next Meeting: November 1, 2018, 7:30 PM at the Garland Activities Building

Presentation: "Color of Minerals" by Dr. George Rossman from the Dallas Mineral Collector's Symposium DVD

Features

Federation Information

Monthly Columns

Notices