

DESERT DIGGINS

Club Objectives

To Collect and study minerals and rocks. To disseminate a general knowledge of the science of mineralogy and allied subjects. To provide opportunity for the exhibition and exchange of specimens.

Meetings and Workshops

Meetings: 1st Friday, 7:00PM
Workshops: 2nd, 3rd, & 4th Fridays, 6:30PM.
Location: 25647 W. Main St., corner of Western & Main, Lenwood/Barstow.

MDGMS Officers 2018

President:

Danny Watts

Vice-President:

Scott Stevenson

Treasurer:

Judy Livingston

Secretary:

La Vella Tomlinson

Board of Directors 2018

Bill Johnson

Joe Sumners

Janna Johnson

Toni Pizzo

John Printz

Past President:

Vivian Watts

Editors: Wayne Mallon

La Vella Tomlinson

Lana Heller-Wood



John & Chieko Printz - Sphere Display at our 2017 Gem & Mineral Show. The Rose Quartz sphere in the front is shouting out, "I'm the Rock of the Month!"



Judy Livingston - Amethyst Display, 2016. The Amethyst is also shouting out, "I'm the Rock of the Month!"

Actually the **ROCK OF THE MONTH** is **QUARTZ** - which is simply Silicon Dioxide, the most common mineral on earth & and one of the most beautiful with all its colorful crystalline glory. Crystals are a six-sided prism with a pyramid top. Some of its many varieties are clear Rock Crystal, purple Amethyst, yellow Citrine, Ametrine (Amethyst & Citrine together in the same crustal), Milky White Quartz, pink Rose Quartz, & gray/black, brown Smoky Quartz.

Judy Livingston contributed this article from the Shadow Mountain Gem & Mineral Society's newsletter 'The Desert Hobbyist': How Amethyst Crystals are Formed, from the "Leaverite News", 2007.

"One of the fondest memories of the Tucson Gem & Mineral Show is coming upon a parking lot full of enormous Amethyst geodes (Cathedrals), 6 feet or more high, resting partly in the sawdust of their packing crates. The bulbous to tubular geodes are big enough for an adult to sit in, & are lined with deep purple gemmy amethyst,

sparkling in the Arizona sunlight. All for sale! How do such wonders form?

These wonderful geodes come from a region along the Brazil-Uruguay border. The genesis of deposits on the Brazil side of the border has been extensively researched by an international team of geochemists led by H. Albert Gild of Technische University Munchen in Germany. The geodes are mined from several lava flows belonging to the Parana Continental Flood Basalt Province. This is one of the largest outpourings of lava known. An estimated 800,000 cubic kilometers of lava extruded in an 11 million year time span. For comparison, this would be enough to cover Minnesota with Basalt Lava over 2 miles high. The lava outbursts occurred as part of the opening of the South Atlantic Ocean during Cretaceous time about 130 million years ago. However, only a few of these flows are known to host Amethyst geodes.

Gilg prepared a two state model for their formation. In the first stage the large hollows form. This is caused as volcanic gasses were released from certain lavas as they cooled. Not every lava has enough dissolved gas to form such big openings. As gas bubbles emerge from the congealing lava (much as bubbles emerge when beer or soda is poured) they coalesced as they rose. The lava was cooling fast too, & soon became thick & sticky that bubbles quit rising & were trapped. The bulbous or tubular shapes thus point towards the flow, easily seen when the geodes are in place in the mines. These cavities were still empty of crystals.

The second stage was the formation of the Amethyst, plus celadonite, calcite and gypsum fillings. An important clue to this event is the presence of small gas & liquid bulbs (called liquid inclusions) trapped within these minerals. These are samples of the mineral-forming liquids caught as the crystals grew. Fluid inclusions are treasure troves of information when studied with sophisticated instruments. Analysis of the fluid inclusions in the amethysts, calcite & gypsum show them to be filled with slightly salty water. This water has a temperature of no more than 100 degrees C, & possibly less than 50 degrees C, during mineral formation. These cannot be fluids related to the magma that formed the lavas.

What was the source of these fluids? An amazing story unfolds from the radiometric dating of the minerals. The basalts formed about 130 million years ago, but the green celadonite, which makes up the rinds of the geodes, formed about 70 million years ago. For 60 million years these enormous cavities sat empty of crystals. Trace element data from the fluid inclusions gives another important clue to the source of the mineral-forming fluid. Below the lava is a large aquifer, the Botucatu Aquifer, filled with ground water that closely resembles the fluid inclusion liquids. Uplifting and tilting of the area about 70 million years ago would force water out of the aquifer into the porous areas of overlying lava. In the lava flows these waters would have found volcanic glass. Glass breaks down over geologic time and makes silica & other chemicals available in a form that is readily soluble in water soaking through the rocks. The water carried these chemicals into the cavities, where the amethyst and other minerals grew during cooling and pressure release.

Understanding the process of this special combination of geologic circumstances, unfolding over millions of years, gives the geologist tools to discover these wonders.

Annual Membership Dues

Adults - \$20.00

Juniors - \$10.00
(10 - 18 yrs)**Contact & Information**

Facebook:

www.facebook.com/mojavedesertgemandmineralsociety

Web Site:

www.mdgms.net

Email:

mdgms.contact@gmail.com

Our APRIL Birthdays

*1st April Dakota Shelley**3rd April Seth Perez**16th April Sandy Wagner*

Happy Birthday

SHOW DATES

April 6-8, Vista G&M Society show & Antique gas & steam engine museum. Their raffle grand prize will be a Cathedral Amethyst.

April 21-22, Conejo G&M club, 190 Reino Rd, Newberry Park, CA. Free admit. www.cgamc.org

April 7-8, Mariposa G & M club; Mariposa Co. Fairgrounds. Speakers. \$3.

Quartz: Lana Heller-Wood reminds us that Citrine is widely used as a gemstone, & after Amethyst it is the most popular Quartz gem. Citrine is the yellow to brownish-red variety of the mineral quartz. Most Citrine is formed by heat-treating purple Amethyst. Citrine may also be produced by heat-treating Smoky Quartz from certain localities. In some Amethyst deposits, including those from Brazil, the Amethyst has been partially or fully changed over to yellow Citrine by natural means of heating. Ametrine, where the crystal is both Amethyst & Citrine, is a favorite of Vivian Watts.

Natural Citrine, which is rare, is yellow to orange-yellow, & occurs in lighter hues than the heat-treated crystals - which are dark orange-brown to reddish-brown & almost all has a reddish tint, whereas the natural Citrine does not. Rob Stapp has covered how to identify altered specimens of many minerals, just so that you know what you are purchasing. Sometimes natural Citrine has a "smoky" hue to it, being borderline between Citrine & Smoky Quartz, with either definition being correct. Citrine mostly occurs in igneous environments.



WORKSHOP REPORT, 3rd Friday, April 16th:

The saws and Genies were busy. Leslie & Dian had the findings unboxed donated by Regina Oxley; purchases were made. Rocks were being painted by Lana, Mara, Daniel, La Vella & Bill T. Mara brought Kern River rocks & donated hers shown in the photo to Spin the Wheel.

GENERAL MEETING MINUTES — March 2, 2018

The meeting was called to order at 7:10 pm by Scott Stevenson, vice president; followed by the Pledge of Allegiance. Happy Birthdays were wished to our March birthdays members. Guests: Ann, Matt, & Mara (Lana's sister), John Hill & Bill & Janna's grandson.

Business: Minutes of the February general meeting were motioned approved as read in the newsletter by Sandy Wagner and Joe Sumners. Voted approved by the membership.

La Vella Tomlinson announced that Lana Heller-Wood had volunteered to be one of the newsletter editors.

Dale Peabody asked about repairs needed for the club show trailer. Joe Sumners reported that what the trailer needs is the old tables unloaded and the newer tables loaded in. The newer tables have been stored in Norm & Tricias garage since December.

Equipment: John Printz did not make it from Los Angeles tonight with his sister-in-law's casting equipment which he is selling for her. If interested you can contact Bill Johnson via the club's facebook page for his phone number or ask La Vella Tomlinson.

Scott Stevenson has an old trim saw for sale, which can be refurbished much newer.

Bill Johnson has a faceting machine for sale.

John Hill has rough rock for sale.

Treasurer's Report: Scott announced there isn't one, because Judy Livingston & Norm & Tricia Sheppard now have the winter respiratory illness going around. We hope they are well soon.

Rick & Gayle Gilpin brought some of the Lake Havasu Rock & Mineral Society's new brochures. The club is very proud of their new workshop & invites everyone to stop by if they are in the area. Gayle also donated more fabric for the sewing of the grab bags.

Field Trips: Bill Johnson announced that the field trip for March will be on-your-own to the Tailgate field trips to all the different Marble sites found in the Stoddard Wells area. Check our club's facebook site - [mojavedesertgemandmineralsociety](https://www.facebook.com/mojavedesertgemandmineralsociety), for announcements for the April field trip or a possible second field trip in March.

Lana Heller-Wood & Bill & Janna Johnson brought jasper found on the February field trip to Lavic and the southern Cady Mountains. Lana found an impressive collection of multi-colored Jasper and also brought a slab of sodalite, a gift from her mom. Bill Johnson brought samples from west of Sleeping Beauty (there was soft sand to transverse). His agate was exitic seam agate with vugs, little crystal blades, plumes, & bubbles of chalcedony.

Bill & Janna Johnson also brought some of their Beryl crystals for Rock of the Month: some rough industrial blue beryl, Heliodor from Brazil (a yellow Beryl), and blue Aquamarine Crystals from Colorado.

La Vella & Bill Tomlinson didn't have any Beryl so brought other kinds of blue & green crystals. La Vella brought a blue marble that was in a box labeled 'Stoddard Wells', but questioned its locality. Scott Stevenson said that he and Danny Watts were collecting on

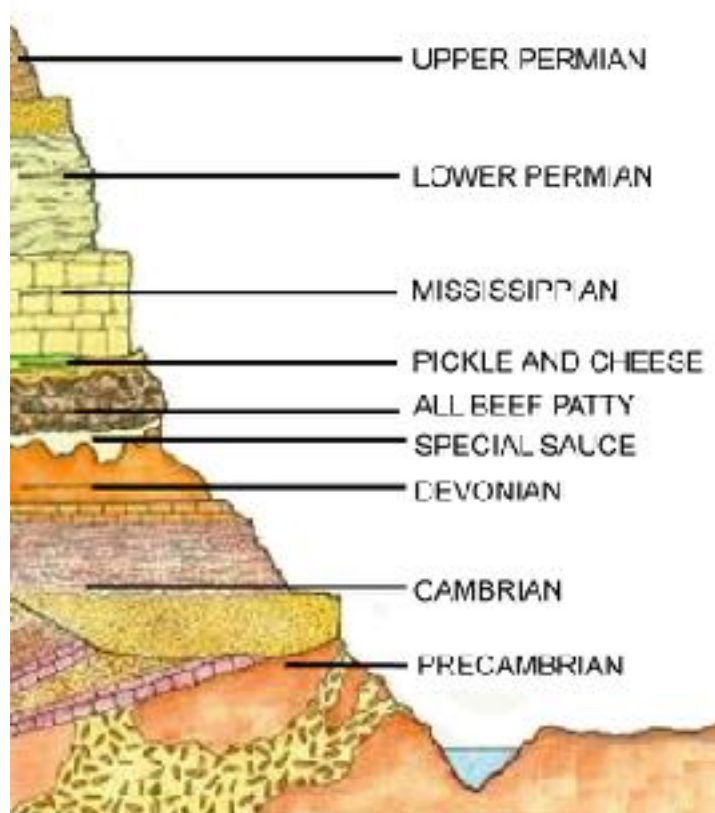
mountain tops at Stoddard Wells last weekend and found some light blue marble. La Vella's piece would have been collected by her father in the late 1950's, early 1960's.

Workshop: La Vella Tomlinson announced that on the third Friday workshop, March 16th, she will bring her paints and those who want to come can also paint rocks. There will be other rock painting parties during the year. Rocks can be painted for the December 2018 show's Wheel of Fortune, or be kept for yourself, or can be labeled and hidden now as the facebook groups Barstow Rocks! Lucerne Valley, Yermo, Daggett, Fort Irwin, and High Desert Rocks groups do. Guest Mara said that the next time she visits she will bring a bucket of Kern River rocks to paint for the gem show's prizes. Thank you, Mara.

Cab of the Month: Denise Orebaugh won with a cab that her aunt had given her and Denise wire-wrapped. Scott Stevenson won second placed with a Thunderegg cab that he made from one of the Thunderegg door prizes donated by Danny Watts last month.

Door Prizes: Bill and Janna Johnson gifted the bags of slabs and chunks from his yard & past field trips for tonight's Door Prizes. The lucky winners of the mystery bags were: Bill Tomlinson, Sandy Wagner, Mayra Avila, Gayle Gilpin, John Hill, Rick Gilpin, guest Mara, Lana Heller-Wood, guest Matt, Debbie Savacool, Dale Peabody Joe Sumners, Toni Pizzo, guest Ann, & La Vella Tomlinson. Enthusiastic clapping by Janna's grandson cheered on each winner.

It was motioned and all agreed, Scott Stevenson, vice president, adjourned the meeting. Respectfully Submitted, La Vella Tomlinson, secretary



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Stamp

First Class Mail



Newsletter



Desert Diggings

