



Judy Gordy. Editor  
Official Newsletter of the  
Western Dakota Gem & Mineral Society  
PO Box 3620,  
Rapid City, SD, 57709-3620

Affiliated with RMFMS & AFMS

January 2017 Edition  
Meeting: January 12, 2017. 7PM

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**REMEMBER THIS IS YOUR LAST NEWSLETTER  
IF YOU HAVEN'T PAID YOUR 2016-2017 DUES**

It's agate hunting time again!

The purpose of our club is to promote interest and education in geology, mineralogy, paleontology, archeology and lapidary, to sponsor and promote means of coordination of the work efforts of groups and individual.



# THE AMMONITE



Newsletter of the Western Dakota Gem & Mineral Society

January 2017

## WESTERN DAKOTA GEM AND MINERAL SOCIETY 2016-17 OFFICERS AND CHAIRMEN

|  |                     |
|--|---------------------|
| <b>President:</b> Truman Goddard -- 12009 Crook City Rd, Whitewood, SD 57793 .....                                   | 605 269-2015        |
| <b>Vice President:</b> John Dickinson -- PO Box 775, Lead, SD 57784 .....  | 605-580-5579        |
| <b>Secretary:</b> Judy Gordy -- 407 E Minnesota St Apt 209, Rapid City, SD 57701 .....                               | 402-208-6079        |
| <b>Treasurer:</b> Leslie Lysenko -- 2710 Mystic Mountain Rd., Rapid City, SD 57702.....                              | <b>605-786-8801</b> |
| <b>BHRMUC Rep:</b> Ellen Tilley -- 21653 Piedmont Meadows Rd., Piedmont, SD 57769.....                               | 605-787-4659        |
| <b>RMFS SD Dir.:</b> Sony Hemsher -- PO Box 376, Piedmont, SD 57769 .....  | 605-431-2755        |
| <b>RMFMS PLAC Rep:</b> Brandon Nelson -- 1607 Sioux Ave, Rapid City, SD 57701.....                                   | <b>605-593-6610</b> |
| <b>ALAA SD Rep:</b> Brandon Nelson -- 1607 Sioux Ave, Rapid City, SD 57701 .....                                     | 605-593-6610        |
| <b>Field Trip Chairman:</b> Ellen Tilley -- 21653 Piedmont Meadows Rd, Piedmont, SD 57769.....                       | 605-787-4659        |
| <b>Board Member:</b> Sony Hemsher --- P. O. Box 376, Piedmont, SD 57769.....   | 605-431-2755        |
| <b>Board Member:</b>   |                     |
| <b>Board Member:</b> Ellen Tilley -- 21653 Piedmont Meadows Rd., Piedmont, SD 57769.....                             | 605-787-4659        |
| <b>Newsletter Editor:</b> Judy Gordy -- 407 E Minnesota St Apt 209, Rapid City, SD 57701 .....                       | 402-208-6079        |
| <b>Facebook Administrator:</b> Tabitha Wood -- 4063 Terry Dr, Rapid City, SD 57703.....                              | 402-706-0168        |
| <b>Librarian:</b> Calvin Luke -- 714 Halley Ave, Apt.2, Rapid City, SD 57701.....                                    | 605-430-1772        |
| <b>Historian:</b> Tabitha Wood -- 4063 Terry Dr., Rapid City, SD 57703.....  | <b>402-706-0168</b> |
| <b>Webmaster:</b> Barbara Goddard -- 3280 Bumblebee Dr, Prescott Valley, AZ 86314 .....                              | 928-237-9261        |
| <b>Calling Committee:</b> Jan Goheen 605-341-6161      Letha Wynia 605-721-0550      Patricia Dickinson 605-580-5579 |                     |

**Club Information:** Western Dakota Gem and Mineral Society, PO Box 3620, Rapid City, SD 57709-3620

**CLUB WEBSITE** is: [www.WDGMS.org](http://www.WDGMS.org) **OTHER CLUB SITES:** Facebook -Western Dakota Gem and Mineral Society/groups.

**Meetings:** Second Thursday of each month (except August) at 7:00 PM

**At:** Minneluzahan Senior Center, 315 N 4<sup>th</sup> St., Rapid City, SD 57701

**ANY SUBMISSIONS FOR THE NEWSLETTER SHOULD BE IN BY THE 25<sup>TH</sup> OF EACH MONTH**

If you change your home address, or your email address, or [have a problem receiving a bulletin, please contact the editor at 402-208-6079 or by email at ammonitenewsletter@gmail.com and it will get corrected.](#)

**CLUB DUES:** \$15.00 per person - \$20.00 per family with children under 18 yrs -- Includes 11 newsletters by E-mail.

If you chose to receive the newsletter by mail, there is an additional \$10.00 cost to cover the mailing.

Dues cover the RMFMS insurance and the newsletter.

**Send dues to the Treasurer:** Leslie Lysenko, PO Box 3620, Rapid City, SD 57709-3620

**MEETING: Thursday, January 12, 2017**

**PROGRAM:** Barbara Beasley's trip to the Galapagos Islands

**REFRESHMENTS:** Lori Green

**DOOR PRIZES:** Lori Green

**MESSAGE FROM THE PRESIDENT –TRUMAN GODDARD**

**Hi all. Well we have made it to the new year. Yippee! There will be a board meeting at six before the regular meeting.**

**We need people to work several places at the show in July. Check with Brandon or me as to where. I will have to fill the position on the board that was held by David Ramberg. If you want to be on the board of directors talk to me. If you have someone in mind that you think would be good for the position tell me.**

**I believe the RMFMS would like to hold the Federation Show in conjunction with our show in July of 2018. They might want an answer at the show in March of 2017 at Albuquerque. Think about it and let's have a discussion on this in our regular meeting in Jan.**

**See you at the meeting.**

**koo  
Truman**

**MINUTES FOR THE DECEMBER 12, 2016 MEETING**

**Since December is the Christmas Party there was no business meeting and therefore no minutes.**

**ALAA SD REPORT**

**BHRMUC REPORT**

**RMFMS PLAC REPORT**

**FIELD TRIPS**

**WITH DEEPEST SYMPATHY**

**Pete and Neal Larson's father passed away on December 5<sup>th</sup> with his funeral on December 10<sup>th</sup>. Neal Larson Sr was 94 years old and lived in Mission, SD. We extend our deepest sympathies to Pete and Neal.**

## ANNOUNCEMENTS

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REMEMBER THIS IS YOUR LAST NEWSLETTER IF YOU HAVEN'T PAID YOUR 2016-2017 DUES.

ANY SUGGESTIONS FOR PROGRAMS FOR OUR MEETINGS? PLEASE TALK TO JOHN DICKINSON. NEED PROGRAMS FOR FEBRUARY, APRIL AND ALL LATER MONTHS.

REMEMBER THE ROCK SHOW IS JULY 22<sup>ND</sup> & 23<sup>RD</sup>. NEED LOTS OF VOLUNTEERS. IF YOU WANT TO HELP WITH THE SILENT AUCTION, CONTACT TABITHA WOOD. IF YOU WANT TO HELP AT THE INFORMATION TABLE OR ADMISSION TABLE, CONTACT JUDY GORDY. ANY OTHER JOBS TALK TO BRANDON NELSON OR TRUMAN GODDARD.

## FUTURE SHOWS

January 17 - February 13, 2017 -- Tucson, Arizona -- Winter, 2017 – The Winter show is 49 separate shows lasting from 1 day to 26 days – Some are wholesale only, business only, public, pre-registration and some have registration fees. – check “tucsonshow.net” for exact dates, locations, and type of show.

June 2-4, 2017 -- Wauseon, Ohio -- Jewelry, Rock and Mineral Show – by State Line Gem & Mineral Society – Friday 6/2 @ 9am – Sunday 6/4 @ 1pm – Fulton County Fairgrounds, 8591 State Route 108.

**July 22-23, 2017 --- Rapid City, SD -- 37<sup>th</sup> Annual Gem & Mineral Show – by Western Dakota Gem & Mineral Society – Rapid City Civic Center – Saturday 9am-6pm – Sunday 10am-4pm – Set up day is Friday 8am to 6pm with a pot luck dinner at 6 pm for members and vendors.**

## 600,000-YEAR-OLD VEIN OF VOLCANIC ASH TURNS UP IN LANDFILL

In May of 2016, the city of Lincoln, Nebraska was preparing to open a new cell in the city's landfill, that lies just north of Lincoln, which they do about every three years. To open a new cell, a contractor excavates the dirt, then puts down layers of clay, plastic, gravel, and felt at the bottom of the cell to prevent liquid from the garbage and trash from seeping into the ground water. This cell was being excavated by Alfred Benesch and Co. with engineer Greg Westphall overseeing the contract. During the excavation, they find a layer of ash approximately 250 feet long, 5 to 15 feet wide, and 4 to 5 feet deep. The ash was discovered underneath the glacial till, sitting in what would have been a glacial lake that formed in front of the ice sheets. Westphall said he believes the deposit might be a drift, pushed up against a stream. He wants to send samples to the State Geologist to officially date it. But Westphall believes it came from a volcanic eruption in what is now Yellowstone National Park in northwest Wyoming from 600,000 years ago.

Published in the Rapid City Journal May 26, 2016 from the Associated Press.

## ANCIENT UNDERWATER GARDEN DISCOVERED IN CANADA

The earliest known garden in the Pacific Northwest has been discovered and it is underwater. The site is about 30 kilometers east of Vancouver, Canada, on land belonging to the native American group Katzie First Nation. It was part of an ecologically rich wetland and divided into two parts, one on land where people lived and build their homes and the other was underwater. The people had arranged small stones into a tight-knit 'pavement' covering more than 40 square meters of submerged ground. When archaeologists excavated this paved area, they found nearly 4,000 wapato tubers, a potato-like plant that grows in swampy earth and about 150 wooden tools carved into broad rounded tips similar to current trowels. The team hypothesized that this site represents an ancient wapato garden. Although not a domesticated crop, wapato was an important food source, especially in winter. The paved area kept the wapato from growing too deep in the earth and made it easier to harvest. The broad, flat tools were likely the ends of the digging sticks, they used to pry the tubers out of the muddy earth. Radiocarbon dates reveal that the garden is 3800 years old, making it the oldest known example of people cultivating nondomesticated plants in the Pacific Northwest.

By Lizzie Wade for Science. December 21, 2016 at 2:00 pm.

## A SUPRISING NEW THEORY OF HOW DINOSAURS GOT SO HUGE

Terry Gates, a paleontologist at North Carolina State University has been studying dinosaur skulls and changing the theories as to why their skulls have bumps, hornlets, and extravagant crests. Scientists have thought for years that the horns and crests helped dinosaurs communicate and display dominance. But in his study of the skulls, Gates found that only the largest have bumps. Gates and his co-workers catalogued 111 skulls of theropods, predatory dinosaurs like Tyrannosaurs rex, from museum collections and publications from all over the world. Theropods range in size from smaller than a house cat to as much as 13,000 pounds. They found that 20 of the 22 biggest dinosaurs had bony head ornaments compared with just one of those under 80 pounds. They also found that dinosaurs with the ornaments evolved more rapidly into larger dinosaurs. Dinosaurs weighing more than a ton with head ornaments increased their body size 20 times faster than those without ornaments, adding several hundreds of pounds every four to six million years. "Once you get crests, your body size just shoots up super fast" per Gates. These new findings suggest that adornments played an important role in body size, an example is the bony ridges around T. rex's eyes which are more pronounced in adults that had plenty to eat as youngsters. In the classic vein, T. rex would increase in size over the generations because more bulk would help it hunt and survive. With Gates new theories, his ornamentation would let him impress a mate and have his pick of the mating pool, and therefore pass down size and ornamentation.

By Asher Elbein. Smithsonian Magazine. December 2016

## FOUND: A ROMAN TOMBSTONE BURIED IN THE NEW YORK CITY SUBURBS

Fox 5 reports that a construction crew working on a new housing development in West Chester County, New York have found a massive mysterious stone. The rectangular pillar is hollow on top and carved with ornamentations and a Latin inscription on one side. According to a Roman Art expert at the Metropolitan Museum of Art, the pillar is a tombstone from 54 AD. It came from Rome and belonged to a tax collector, Tiberius Claudius Saturninus. Why is there a 2,000 year old tombstone in Westchester? It may help to know that this area was once called Millionaires Row because of the lavish mansions built by the Rockefellers, Astors, and other tycoons. This new development is called "Greystone on Hudson" after Greystone Castle owned by Josiah Macy, a partner in Standard Oil. Their mansion burned down in the 1970's and all the debris was buried in the house's foundation. That's where the crew was digging when the tombstone was found. According to Fox5, Macy's wife brought it back from the Villa Borghese in Rome. It's not known if she knew it was from a tax collector's grave, but it's beautifully grim for a very rich woman to put a taxman's grave in her house.

Atlas Obscura December 7, 2016 9:03 am. -- Fox 5 NY. -- [dlvr.it/mqQogG](http://dlvr.it/mqQogG)

## HOLE IN THE GROUND

The Hole in the Ground is a mile wide crater in the Fort Rock Basin of Lake County, Oregon. This crater is situated northeast of Crater Lake in the Cascade Range at 4650 ft. elevation. The crater is a little longer north to south than it is east to west. It has a raised rim that is 100-210 ft. above ground level with the interior 500 ft. below ground level.

The exact origin is not known but is thought to be volcanic rather than an ancient meteor impact. The crater formed 13,500 to 18,000 years old or during the late Pleistocene epoch. The area around the Fort Rock Basin has a legacy of volcanic activity with caches of obsidian, cinder cones, old lava flows and caves. The crater is thought to be a maar – a depression that occurs when water reacts explosively with volcanic lava. They are volcanic tubes that get filled with material and then when basaltic magma intrudes near the surface flashes ground water to steam blowing out overlying rock, soil, and other juvenile material, leaving a depression. There have been blocks as large as 26 ft blown as far as 2.3 miles. These depressions generally form into lakes, but in this case the ancient lake bed dried up leaving a hole. This landscape is so desolate and alien that the astronauts were brought here during the 60's for training in preparation for their trip to the moon.

There is another larger more eroded maar crater west of Hole-in-the-Ground known as Big-Hole.

Atlas Obscura. November 11, 2016. 11:27 pm.

## BIG HOLE

Big Hole is located in the Cascade Range in Lake County, Oregon west of the Hole in the Ground. It is at 4613 ft elevation at the bottom of the maar. It is a large maar, possibly 20,000 years old in the Fort Rock Basin. It is 6,000 ft across and 300 ft deep.

Wikipedia

## MAAR

A maar is described as a broad low-relief volcanic crater caused by a phreatomagmatic eruption (explosion occurs when ground water comes in contact with hot lava or magma). These characteristically fill with water forming relatively shallow crater lakes, also called maars.

The name comes from the local Moselle Franconian dialect of the Daun in Rhineland-Palatinate Germany. Also derived from Latin for mare (sea).

These shallow flat-floored craters which scientists interpret as having formed above a diatreme (a volcanic pipe formed by a gaseous explosion) resulting in a violent expansion of magmatic gas or steam. Deep erosion of the maar presumably exposes the diatreme. They range in size from 200-26,250 ft. across and 33-656 ft. Deep. The maar most commonly fill with water to form natural lakes. Most have low rims composed of a mixture of loose fragments of volcanic rocks and rocks torn from the walls of the diatreme.

Wikipedia

## MAAR LAKES AND DRY MAARS

### MAAR LAKES

Referred to simply as maars, they occur when ground water or precipitation fills a funnel-shaped and usually round hollow of a maar depression originally formed by a volcanic explosion. An example of 3 maars is at Daun in the Eifel Mountains of Germany.

### DRY MAARS

Dry maars result when a maar lake dries out, becomes aggraded or silted up. In some cases, the underlying rock is so porous it is not able to hold water. After heavy winter snow and rainfall, some dry maars partially fill with water, others contain small bogs or artificial ponds only occupying part of the hollow.

Wikipedia

## OBAMA DESIGNATED NATIONAL MONUMENTS IN UTAH, NEVADA

Wednesday, December 28, 2016, President Obama designated the Bears Ears area in Utah and the Gold Butte area in Nevada as National Monuments. These two areas have become flash-points over use of public lands in the Western United States. The Bears Ears area is 1.35 million acres in the state of Utah containing an estimated 100,000 archaeological sites, including ancient cliff dwellings and is sacred to Native American tribes. The 300,000 acre Gold Buttes area, outside Las Vegas is in an ecological fragile area containing rock art, artifacts, rare fossils, and recently discovered dinosaur tracks.

This is a victory for the Native American tribes and conservationists. They said both sites were at risk of looting and vandalism. "Today's actions will help protect this cultural legacy, and will ensure that future generations are able to enjoy and appreciate these scenic and historic landscapes" Obama said in a statement. The administration has rushed to protect vulnerable areas ahead of President-elect Donald Trump's inauguration. Obama has also blocked new mining claims outside Yellowstone National Park and new oil drilling in the Arctic Ocean.

The critics say it is just another layer of unnecessary federal control. And they fear that the national monument designation will close the area to gas and oil development, as well as resident's ability to camp, bike, hike and gather wood.

Republican Senators vow to work toward reversing or reducing Obama's expansive land protections. Orin Hatch claims that Obama showed "an astonishing and egregious abuse of executive power" and that he cares more for "far-left special interest groups" than "the people who have lived on and cared for Utah's lands for generations." Trump's presidency is an open question on how he will respond to the new national monuments. The Attorney General of Utah, Sean Reyes, says he is going to sue over the designation of the Bears Ears area. He's also going to work with local officials to file a lawsuit and that they will work with President-elect Trump to curtail the monument.

The managing director of the White House Council on Environmental Quality, Christy Goldfuss, says the Antiquities Act, that allows for the creation of monuments does not allow a President to undo the designation, but Congress could take action though. Opponents have agreed that the area is a natural treasure worth preserving but are concerned that it will restrict their use of the land. Per federal officials, new mining or energy development will be banned but existing operations won't be affected. Wood and plant gathering is still allowed, as well as hunting, fishing and other recreation.

"The Republican Attorney General of Utah Say's He's Going To Sue Over President Barack Obama's Designation of the Bears Ears National Monument That Spans 1.35 Million Acres In bThe State" Associated Press. 12-29-16. 12:00 am

"Obama Designates National Monuments In Utah, Nevada" Associated Press. 12-29-16

Another article on the Bears Ears area is in the October 2016 Ammonite.

#### REMOTE NEVADA QUAKES FELT IN LAS VEGAS, COULD HAVE BEEN A DISASTER

Nevada had three 5.+ earthquakes on Wednesday, December 28th, near the town of Hawthorne, which is about 100 miles southeast of Lake Tahoe and 90 miles south of Reno. The epicenter was east of the Sierra Range and the Nevada-California border, near rural Hawthorne. The first magnitude 5.7 event was at 12:18 am, followed 4 minutes later by another 5.7 event, then a 5.5 quake at 1:13 am per the US Geological Survey. These big quakes were followed by a series of smaller after shocks including two in the magnitude 4 range and at least a dozen larger than magnitude 3. Fortunately, the quakes only resulted in burglar alarms being triggered at two businesses and a rock slide that didn't affect travel on the nearby highway per the county Sheriff's office. If these quakes had been under a more populated area like Reno, damages would have been at least \$1 billion with the probability of some fatalities and many casualties per Graham Kent, Director of the University of Nevada's Seismological Laboratory. Kent pointed out that this is a reminder that Nevada is the third most seismically active state behind California and Alaska. They have been studying this area since there was a swarm of thousands of smaller quakes recorded over a two-month period in 2011. There have been 13 quakes in the past 24 hrs (12/28); 329 in the last week; 585 in the last month; and 3,694 in the last year. The largest quake measured is 5.7.

By Scott Sonner. Associated Press. 12-28-16. 2:04 am. Updated at 4:47 pm



If you watch where earthquakes are happening, the Cascadia Fault along the Pacific Northwest Coast from Vancouver Island to Cape Mendocino, California has had several on the southern end of the fault. Everybody talks about the San Andreas Fault in California, but the Cascadia Fault is the only one in the US capable of a magnitude 10 earthquake. In fact, it had a 9.0 quake on January 26, 1700. The largest quake in the United States, causing a tsunami that not only devastated the Pacific Northwest Coast, but damaged coastal villages in Japan. The other hotspot is the South Pacific, with quakes in New Zealand, Papua New Guinea, Solomon Islands and Malaysia.

#### PLUTO'S FROZEN HEART? MAY HIDE UNDERGROUND OCEAN

There is increasing evidence that Pluto has an ocean buried beneath its frozen surface. Scientists reported Wednesday, November 14, 2016, that Pluto may have rolled over on its axis eons ago, as a result of tidal forces with its jumbo moon, Charon. The extra weight of an underground sea is the most likely explanation. These findings are based on observations by NASA's New Horizons, which made the flyby of Pluto last year. That Spacecraft is now enroute to a 2019 close approach of another planet. The studies, published in the Journal Nature focused on a 600-mile basin in the left lobe of the heart-shaped region on Pluto known as Sputnik Planitia, after the Russian satellite launched in 1957. According to researchers, Sputnik Planitia is aligned with the tidal axis and on the opposite side from the dwarf planet, Charon. Most likely, the nitrogen ice-coated basin has extra mass below the surface. There is a big elliptical hole in the ground, so the extra weight is hiding somewhere beneath the surface and an ocean is the natural way to get that according to the lead author, Francis Nimmo, Professor of Earth and planetary sciences at the University of California Santa Cruz. He suspects the ocean is primarily water with some 'antifreeze' agent like ammonia. The slow refreezing of the ocean will probably crack the planet's shell, which is consistent with the photos taken by New Horizons. Subsurface oceans may also be present on similar-sized worlds in the Kuiper Belt.

In the opposite direction, Mercury has a big new valley. Scientists attributed it to surface buckling caused by global contraction. The valley is more than 600 miles long, 250 miles wide and 2 miles deep. The valley was discovered from images taken by NASA's Messenger spacecraft which orbited Mercury for four years before crashing into the planet last year. This research team is led by Thomas Watters, a senior scientist at the Smithsonian's National Air and Space Museum. Earth has experienced this type of buckling, involving tectonic movement of both oceanic and continental plates. But this is the first evidence of such movement on Mercury.

Rapid City Journal. November 16, 2016 Associated Press

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