



THE AMMONITE



Newsletter of The Western Dakota Gem & Mineral Society – June 2009



FROM THE PRESIDENT by Deb R.

This is it – the last newsletter before the Gem & Mineral Show on June 27th and 28th. By vote at the May meeting it was decided not to have a field trip on Monday, June 29th so that those who wanted to can attend the Estes Auction.

Rock Auction of Tom Estes Estate Sale
The Day After the WDG&MS Show
June 29, 2009 from 10:00 Am-4:00 PM
23773 Aero Road
Rapid City, SD 57703
Lee Estes: 342-3994

Get with Linda S. for your contract if you wish to sell at the Silent Auction or will be able to work the Silent Auction tables anytime during the Show. Remember that the Seller gets 80% of the selling price and the club gets 20%. Also remember that it was voted that all sellers need to be members this year – they can join and sell at the Show.

Get with Jan G. if you are able to work the Information Table or sell Tickets anytime during the Show.

Don R. is your contact to sign-up for a Display Case. Remember you will be responsible to fill, and empty your items in the case and the specimens should be labeled so that the public knows what they are looking at.

Get with me if you are able to help with Set-up on the 26th, and we would also welcome any who can stay for Tear-down immediately after the Show on the 28th. Any amount of time you can spend supporting the club at the Show is appreciated. **THERE WILL BE A DEALER POT-LUCK** after Set-up on Friday around 6:00pm. Come to the June meeting on the 12th for last minute Show information or to confirm your Assignments.

Steve E. is working on a website for our club and would like feedback from the members to help with the development. Please check the site out at <http://ca.groups.yahoo.com/group/WDG-n-MS> and let him know what you think. The Ammonite will be available on this site, but it will be a revised copy with last names removed from the Directory for officer privacy, as non-members can also view the website to find out information about our club and when/where we meet. Please contact Steve (or myself) if you would like something posted on the site or have suggestions, or bring your comments to the next club meeting.

CLUB CALENDAR:

MONTH	REFRESHMENTS	DOOR PRIZES	PROGRAM
JUNE	Bonnie N.	Steve S.	Show – last minute prep
JULY	Juliet W.	Mickey S.	??
AUGUST	Picnic	Picnic	Picnic
SEPTEMBER	Don & Annette R.	Don & Annette R.	??
OCTOBER	Melanie B.	Deb R.	??
NOVEMBER	Paula H.	Rita H.	??
DECEMBER	Dinner	Dinner	Dinner

FEATURE STORIES:

How Gem Hunting Works (Part 3 of 5)

by Ed Grabianowski

<http://adventure.howstuffworks.com/gem-hunting.htm>

WHERE TO FIND GEMS?

You can't just head outside, poke around some rocks and hope to find specific types of gems and crystals.

Compare gem hunting to bird watching -- if you want to spot a certain species of bird, you wouldn't aimlessly

wander around a forest. You'd learn where that bird lives, what trees it nests in, what it eats, and what its migration patterns are -- leading you to make its eventual discovery.

Let's say you want to find some malachite specimens to add to your gem collection. This mineral is often found near limestone and copper deposits and, within the United States, is most often found in Arizona [source: Cook and Kirk]. Or maybe you're looking for the big score and want to find a diamond. Because diamonds are created under extreme pressure, they form deep within the Earth. They're most common in areas where deep mantle rocks have been pushed to the surface by geological processes. They can also be found in the **alluvial deposits** (rocks and soil deposited by water) along rivers that flow from these areas.

Minerals formed in Earth's mantle can find their way to the surface over the span of millions of years due to huge geologic effects such as tectonic plate upheaval. Earthquakes and volcanoes can bring deep rocks to the surface, while wind or water erosion gradually wears down surface soils to reveal buried bedrock. Humans can reveal bedrock as well, which is why it can be very rewarding to hunt for gems near tunnels, railroads or construction sites (if you're allowed).

There are numerous gem and mineral guidebooks available, many of them designed to fit in a pocket or backpack. These guidebooks can help you distinguish and identify specimens, especially because the rough forms of gems look very different from the gleaming jewels we typically imagine. In rough form, gems are partly or wholly encased in other material, usually rock. They may resemble translucent lumps or have a more defined shape, depending on the crystalline structure of the mineral. If possible, bring experienced gem hunters along on your first trip. They'll know how to spot certain minerals, and their knowledge will go beyond what you

can learn from a book. You could also learn more by visiting a local museum that features samples common to the region.

For every gem in the world, there's a different way to find it. Australian sapphires are found in a certain region covered with alluvial deposits. They're strewn throughout a gravel layer beneath the **topsoil**. Gem hunters dig through the gravel layer and filter the rocks by putting them in a pan and shaking them in water. Because sapphires are heavier than most rocks, they tend to settle to the bottom of the pan. When the pan is flipped over and emptied, any sapphires will be sitting on top.

Panning for gold also relies on the weight of the mineral. Flakes and pellets of gold can be found mixed with gravel and sediments. Gold is heavier than water, so shaking a pan full of dirt, rock and water settles any gold to the bottom. The other material can be washed over the side, leaving the gold behind. Sluices are long channels (like miniature waterslides) with ridges on the bottom. Large volumes of dirt, rock and water course down the sluice, leaving heavy gold caught in the ridges.

There are tens of thousands of types of minerals in existence. And even though the varieties we would call gems are fewer, they're created under combinations of conditions so vast as to be nearly infinite. Pressure, heat, location, the presence of other minerals and impurities, water, and geologic forces exerted later all contribute to the hardness, clarity, crystalline structure and color of gems and minerals. That's what makes them so rare. You'll need a lot more than a guidebook to discover hidden treasures and buried jewels. Find out what gear you should bring in the next section.

(To be continued in the next Ammonite).

ZODIAC STONES (part 6 of 12):

From Wikipedia, the free encyclopedia

Early civilizations such as India and Babylon have attributed gemstones with magical properties. Over time, astrologers assigned gems of certain colors to the twelve signs of the zodiac to help people influence the planets in their favor.

Sign	Dates	Stone	Sign	Dates	Stone
Aquarius	January 21 - February 18	Garnet	Leo	July 23 - August 23	Onyx
Pisces	February 19 - March 20	Amethyst	Virgo	August 24 - September 22	Carnelian
Aries	March 21 - April 20	Bloodstone	Libra	September 23 - October 23	Peridot
Taurus	April 21 - May 21	Sapphire	Scorpio	October 24 - November 22	Beryl
Gemini	May 22 - June 21	Agate	Sagittarius	November 23 - December 21	Topaz
Cancer	June 22 - July 22	Emerald	Capricorn	December 22 - January 20	Ruby

(The article content for Emerald has been edited for content size – please see Wikipedia website for the full information they provide on this Gem/Zodiac stone).



Cut Emeralds



Nat'l Museum of Nat'l History collection



Synthetic Emeralds



Gachala Emerald

Emeralds are a variety of the mineral beryl ($\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$) colored green by trace amounts of chromium and sometimes vanadium. Beryl has a [hardness](#) of 7.5 - 8 on the 10 point Mohs scale of mineral hardness. Most emeralds are highly included, so their brittleness (resistance to breakage) is classified as generally poor. The word "emerald" comes from Latin *smaragdus*, via Greek *smaragdus*, its original source being a Semitic word *izmargad* or the Sanskrit word, *marakata*, meaning "emerald" or "green".

Properties determining value

Emeralds, like all colored gemstones, are graded using four basic parameters, the four Cs of Connoisseurship; *Color*, *Cut*, *Clarity* and *Crystal*. The last C, *crystal* is simply used as a synonym that begins with C for transparency or what gemologists call *diaphaneity*. **Color** Scientifically speaking, color is divided into three components: *hue*, *saturation* and *tone*. Yellow and blue, the hues found adjacent to green on the spectral color wheel, are the normal secondary hues found in emerald. Emeralds occur in hues ranging from yellowish green to bluish green. The primary hue must, of course, be green. Only gems that are medium to dark in tone are considered emerald. Light toned gems are known by the species name, *green beryl*. In addition, the hue must be bright (vivid). Gray is the normal saturation modifier or mask found in emerald. A grayish green hue is a dull green hue. **Clarity** Emerald tends to have numerous inclusions and surface breaking [fissures](#). Unlike diamond, where the loupe standard, i.e. 10X magnification, is used to grade clarity, emerald is graded by eye. Thus, if an emerald has no visible inclusions to the eye (assuming 20-20 vision) it is considered flawless. Stones that lack surface breaking fissures are extremely rare and therefore almost all emeralds are treated, "oiled", to enhance the apparent clarity. **Treatments** Most emeralds are oiled as part of the post lapidary process, in order to improve their clarity. Cedar oil, having a similar refractive index, is often used in this generally accepted practice. Other liquids, including synthetic oils and polymers with refractive indexes close to that of emerald such as *Opticon* are also used. The [U.S.](#) Federal Trade Commission requires the disclosure of this treatment when a treated emerald is sold. Given that the vast majority of all emeralds are treated as described above, and the fact that two stones that appear to be similar in quality may actually be quite far apart in treatment level, a consumer considering a purchase of an expensive emerald is well advised to insist upon a treatment report from a reputable gemological laboratory. All other factors being equal, a high quality emerald with an enhancement level graded *moderate* should cost 40-50% less than an identical stone graded *none*.

Emerald localities

Emeralds in antiquity were mined by the Egyptians and in Austria, as well as [Swat](#) in northern Pakistan. A rare type of emerald known as a trapiche emerald is occasionally found in the mines of Colombia. A trapiche emerald exhibits a "star" pattern; it has raylike spokes of dark carbon impurities that give the emerald a six-pointed radial pattern. It is named for the *trapiche*, a grinding wheel used to process sugarcane in the region. Colombian emeralds are generally the most prized due to their transparency and fire. Some of the most rare emeralds come from three main emerald mining areas in Colombia: Muzo, Coscuez, and Chivor. Fine emeralds are also found in other countries, such as Zambia, Brazil, Zimbabwe, Madagascar, Pakistan, India, Afghanistan and Russia. In the US, emeralds can be found in Hiddenite, North Carolina. In 1998, emeralds were discovered in the Yukon.

Synthetic emerald

Emerald is a rare and valuable gemstone and, as such, it has provided the incentive for developing synthetic emeralds. Both hydrothermal and *flux-growth* synthetics have been produced, and a method has been developed for producing an emerald overgrowth on colorless beryl. Hydrothermal synthetic emeralds have been attributed to IG Farben, Nacken, Tairus, and others, but the first satisfactory commercial product was that of Johann Lechleitner of Innsbruck, Austria, which appeared on the market in the 1960s. Luminescence in [ultraviolet light](#) is considered a supplementary test when making a natural vs. synthetic determination, as many, but not all, natural emeralds are inert to [ultraviolet light](#). Many synthetics are also UV inert. Synthetic emeralds are often referred to as "created", as their chemical and gemological composition is the same as their natural counterparts. The [U.S.](#) Federal Trade Commission (FTC) has very strict regulations as to what can and what cannot be called "synthetic" stone.

Emerald in different cultures, and emerald lore

The Gachala Emerald is one of the largest gem emeralds in the world, at 858 carats (172 g). This stone was found in 1967 at La Vega de San Juan mine in Gachalá, Colombia. It is housed at the National Museum of Natural History of the Smithsonian Institution in Washington, D.C.

Emerald is regarded as the traditional [birthstone](#) for May, as well as the traditional gemstone for the astrological signs of Taurus, Cancer and sometimes Gemini. One of the more quaint anecdotes on emeralds was by the 16th-century historian [Brantome](#), who referred to the many impressive emeralds the Spanish under Cortez had brought back to Europe from Latin

America. On one of Cortez's most notable emeralds he had the text engraved *Inter Natos Mulierum non sur-rexit mayor* (Among them borne of woman there hath not arisen a greater Man. XI, 11) which referred to John the Baptist. Brantome considered engraving such a beautiful and simple product of nature sacrilegious and considered this act the cause for Cortez's loss of an extremely precious pearl (to which he dedicated a work *A beautiful and incomparable pearl*) and even for the death of King Charles IX who died soon after. In some cultures, the emerald is the traditional gift for the 55th wedding anniversary. It is also used as a 20th and 35th wedding anniversary stone. The Authorized King James Version of the Bible, in Exodus 28:18 and 39:11, lists "emerald" as one of the precious stones in the breastplate of the high priest of the Jews; but modern consensus is that this is probably a mistranslation. Ireland is often referred to, especially in America, as the "Emerald Isle".

PLACES AND FACES:

THE 29TH ANNUAL GEM & MINERAL SHOW JUNE 27TH AND 28TH Rushmore Plaza Civic Center, Rapid City, SD

FUN AND MISC:



Everyone had a great time at the **Rock Swap** held over the May 16-17 weekend. Roger Clark, the writer of the Fairburn Agate book had his new edition out and there was a lot to see (and buy) from the Vendors.



May 8 2009 Minutes, by Becky B. ([Thank you Becky for standing in for Hazel](#)):

The meeting was called to order at 7:30 p.m. by President Deb R.. A special welcome to our guest, Lindsey. A motion to accept the minutes as printed in the Ammonite was made by Dave R. and seconded by Jamie B.. Motion carried. Treasurer's Report by Rita H.: 28 families – 43 singles. Motion to accept the treasurer's report made by Mickey, seconded by Jan G.. Motion carried. Publicity report by Mickey stated that the show promotion was going smoothly. The show is listed on the Gem and Mineral magazine's website, not in the publication, because 4-5 months are needed as lead-time for publication of show events. SDSM&T took fliers for the show and will have info on their website. Calls are coming in asking about the show, so the word is getting out. Steve S. suggested a trip to the Mammoth Dig as an outing for the Saturday after the meeting. He is also going to try and get a calling tree started for those who want to be notified about outings that are not scheduled for the day after the meeting.

SDSM&T has a new geological map out and there are some new exhibits worth seeing at the museum.

Jamie B. stated that Roger Clark has published a third book about fairburns and will have this available for purchase at the Rock Swap May 16 and 17. Anyone who wants to participate in the swap may do so, as long as they contribute something for the silent auction to be conducted on Saturday. Jamie is working on arranging some tables so that club members may sell some of their things at the club's June show. Discussion was had expressing concern that the dealers may feel there is too much competition from club members and be upset. Jamie will contact the members who want to sell their wares about the availability of tables. Sign up sheets were passed around for members to sign to help with the show setup, days of the show, silent auction, etc. The Scottsbluff Swap is scheduled for May 23 and 24. Jamie expressed concern about the South Dakota Wild Grasslands Coalition. He attended a presentation where one of their representatives showed slides showing destruction of the grasslands and advocating turning areas into total wilderness

areas. The members are urged to keep picking up their trash, staying on the trails while driving, and to contact their representatives and senators to express their concerns about the closing off of rock hunting areas. Jamie and Miranda are going to work together to come up with some sort of equitable solution about our club and the coalition becoming allies and trying to work to come up with some sort of equitable solution for all. They will present their suggestions at the next meeting. Don R. will need more rock cards to glue rocks on for show handouts. It was moved by Deb and seconded by Paul that he can purchase 5000 more tickets. Dale J. will help Don with small tumbled stones to put on the cards.

New Business:

It was decided that the field trip usually scheduled for the Monday after the show be the Estes Auction, as there will be a lot of rocks and interesting things for sale at this event and a lot of the club members want to attend this. Steve E. has designed a website through Yahoo for the club. He would manage this site for us at no fee. It will be a means to post information and announcements, leave messages, and for the public to find out about our club. There will be no private information included on the site. Deb will help back Steve up in the site's maintenance. Currently, to find the site, just look under South Dakota Rock Clubs. The members are urged to look at this site and see if there's anything they want changed or added. Once it gets more finalized, the site information can be added to the club's business card. Steve S. gave a very informative program about rock hunting in Alaska. It made this lady wish she were on her way to some of that beautiful scenery and some of those rock areas! Thank you, Steve!

The meeting was adjourned by a motion from Mickey and a second from Jan G..

Minutes respectfully submitted by Becky B. (helping out while the secretary was absent)

Western Dakota Gem & Mineral Society 2008-2009 Officers and Chairpersons (area code 605)

President:	Deb R., 430 E. Idaho St., Rapid City, SD 57701.....	343-7850
Vice President:	Roger V., 4800 Summerset Dr., Rapid City, SD 57701.....	341-6299
Secretary:	Hazel W., 2415 Judy Ave., Rapid City, SD 57702.....	399-2670
Treasurer:	Rita H., 2569 Ambush Ranch Rd., Rapid City, SD 57703.....	348-3916
Show Co-Chair:	Jamie B., 1701 5 th St., Rapid City, SD 57701.....	415-6283
Show Support:	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
Silent Auction Chair:	Linda S., 11809 Eastridge Hill Dr, Black Hawk, SD 57718.....	716-4047
Silent Auction Asst-Chair:	Mickey S., 201 Patton St., Rapid City, SD 57701.....	791-1953
BRC SD Rep:	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
BHRMUC Rep:	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
RMFS SD Dir.:	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
RMFMS SD Reps:	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
Field Trip Chair:	Steve S., 11809 Eastridge Hill Dr, Black Hawk, SD 57718.....	716-4047
Field Trip Asst-Chairs:	Jan B. and Calvin L.	
1 yr. Board Member:	Jamie B., 1701 5 th St., Rapid City, SD 57701.....	415-6283
2 yr. Board Member:	Ellen T., 21653 Piedmont Meadows Rd., Piedmont, SD 57769.....	787-4659
3 yr. Board Member:	Dale J., 14974 Back Country Trail, Rapid City, SD 57703.....	393-2011
Newsletter Editor:	Deb R., 430 E. Idaho St., Rapid City, SD 57701.....	343-7850
Historian	Donald R., 2701 Mystic Mt. Rd., Rapid City, SD 57702.....	348-8948
Publicity Co-Chair:	Mickey S., 201 Patton St., Rapid City, SD 57701.....	791-1953
Publicity Co-Chair:	Calvin L., 220 E. St. Joseph #2., Rapid City, SD 57701.....	593-1711
Librarian:	Steven E., P.O. Box 1123, Rapid City, SD 57709.....	484-5712

Club Address: 2701 Mystic Mt. Rd., Rapid City, SD 57702

Meetings: Second Friday of each month, 7:30 p.m., Minneluzahan Senior Center, 315 N. 4th St., Rapid City

Dues: Family - \$15, Single - \$10, Payable by cash, check, or money order. Senior Citizens free membership (does not include bulletin)

The purpose of our club is to promote interest and education in geology, mineralogy, paleontology, archaeology, and lapidary, to sponsor and provide means of coordination the work efforts of groups and individuals interested in these science fields.

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**Material in this newsletter may be used if proper credit is given.
Material for this newsletter must be given to the editor by the
25th of the month preceding that issue.**

