The Apache Junction Rock & Gem Club, Inc.

SMOKE SIGNALS

Nov 2010

Officers of the Apache Junction Rock & Gem Club, Inc.		
President:	Katy Tunnicliff	918-440-9152 katydidnt2007@gmail.com
Vice-President:	Jerry Gervais	480-252-2456
Secretary:	Mattie Gadd	503-705-3933 mmpdg16@msn.com
Treasurer:	Kelly Iverson	480-325-2705 steameng@cox.net
Trustee:	Jack Pawlowski	480-288-2642 j6ac5k@calcon.net
Trustee:	Brent Staker	480-298-1359 gbstaker@yahoo.com
Trustee:	Tom Sundling	402-432-9790

I apologize for this newsletter being so late.
Kelly

The Club meets on the second Thursday of every month October thru April at 7:00 pm at the Carefree Manor RV Park, at the corner of Tepee & Delaware, Apache Junction, AZ

Club Dues - $10 per new member. Renewals are $10 per member. This may be paid at the general meeting or by mail to Ron Ginn, 691 N. Velero St., Chandler, AZ 85225.

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Next Meeting – Jan 13, 2010

7:00 pm at the Carefree Manor RV Park, at the corner of Tepee & Delaware, Apache Junction, AZ.

Meeting Minutes Dec 9, 2010

Apache Junction Rock & Gem Club
General Meeting Minutes, December 9, 2010

- The Meeting was called to order by the Vice President at 7:00 pm, and then she led the Pledge of Alliance.
- The Treasurer report is as follows: Show checking account $365.69, General checking account $602.47, Savings account $6,467.68, CD $8,400, CD $3,000 and CD $10,185.22 to total the club's accounts as $21,585.22.
- The Secretary's minutes were approved as circulated.
- Mr. Ginn, Membership Chairman, reported we have 292 club members.
- Mr. Warren, Field Trip Chairman, reported that next Wednesday, December 15, 2010, the field trip will focus on black and white onyx. He will be sending out emails for directions to the field site. There will be no January 2011 coalition field trip.
- Natalie Kirmiel thanked all who assisted with dinner dishes and set up. She will have sign up lists for snacks starting January 2011.
- Brent Staker, Lapidary Shop Chairman, reported that the shop activities are going well and the skilled monitors make the shop a success. The broken 18" and 10" saws have been repaired. The new 14" saw is functioning well.
- The new Trustee, Tom Sundling, was introduced. He is replacing Bill Jonas as Bill had to remain in Washington this year.
- Elections were held with the current nominations. No further officer nominations

were made. The election results are Katy Tunnicliff- President, Jerry Gervais-Vice President, Kelly Iverson-Treasurer, Mattie Gadd-Secretary, and Jack Pawlowski-Trustee.

- Richard Grzych announced our first Rock Art Show will be held on December 18-19, 2010 at 2260 North Apache Trail/Hwy 88. Set up time for the artists is 7 am, however, you can set up tables the night before. The art show hours are 8 am until dusk. The parking in front of the store is for customers and the parking behind the store is for the artists. Please bring your own receipt book for sales. We will have soda to sell. Mr. Grzych reminded us to bring our own food as their will be no food sales. Artists were asked to review and sign the Rock Show rule form.
- Our Rock and Gem show will be held February 19-20 at the Skyline High School in Mesa. We will need volunteers for set up, gate table, Ming tree booth, Silent Auction, Wheel booth, Membership table, etc.
- The meeting was adjourned at 7:30 pm.
- Mr. Warren said the blessing prior to our annual Holiday Dinner.

Submitted by Barbara Bayer, Secretary

Article of the Month

James Dwight Dana: An American Mineralogist

by Andrew A. Sicree

The young mineral collector

The foremost American geologist and mineralogist of the 1800's was James Dwight Dana (1813-1895). Known to mineral collectors primarily for his *System of Mineralogy*, first published in 1837, Dana was also the author of the influential *Manual of Geology*, and other works including a report on the geology of the U.S. Exploring Expedition (1849), and monographs on corals, crustaceans and volcanology.

Growing up in Utica, New York, where his father owned a hardware store, the young Dana was artistic, musically talented (playing the piano and guitar), and competent with hand tools. His family was religious and Dana lived his entire adult life as both a scientist and a devout Christian. Like many youngsters, Dana got his start in science by collecting insects, plants, and rocks.

Benjamin Silliman's influence

Dana studied at Yale where Benjamin Silliman, founder and editor of the *American Journal of Science*, (after whom sillimanite is named) was one of his professors.

After graduating from Yale, Dana served as an instructor for the U.S. Navy. Sailing in the Mediterranean, he observed an eruption of Mt. Vesuvius and a letter describing the episode was published in the *American Journal of Science.*

Returning to Yale in 1834, Dana undertook systematic studies of minerals. Utilizing his childhood mineral collection and Professor Silliman's more extensive cabinet of minerals, Dana studied and organized minerals into groups based on their chemistry and crystallography. His resulting work, the famous *System of Mineralogy*, was published in four editions during his lifetime, and in many additional editions after his death. His method of chemical classification of minerals remains as the basis for the study of mineralogy to this day.

Exploring the Pacific

In 1838, Dana became the mineralogist and geologist of the U.S. Exploring Expedition. This oceanographic expedition consisted of six U.S. Navy ships and included a team of civilian scientists. Sailing into the Pacific Ocean, Dana explored the mountains in Andes, Mt. Shasta in the Cascades of northern California, Hawaiian volcanoes such Kilauea, and the reefs and atolls of numerous South Pacific islands.

Returning home after four years, he spent much the next decade writing scientific reports of the expedition's findings. It was during this period that Dana married Silliman's daughter Henrietta (undoubtedly his tales of high-seas adventures helped to endear him to the young Henrietta).

As a professor of geology and mineralogy at Yale, Dana succeeded Silliman and taught students for more than forty years. During his career he published more than 200 papers and books. He retired in 1892, only a few years before his death.

The System of Mineralogy

Dana's *System of Mineralogy* has a had an amazing history. 170 years after its first edition, the *System of Mineralogy* continues to thrive. Repeatedly revised and updated by editors including W. E. Ford (13th and 14th editions, 1912-1929) and Cornelius S. Hurlbut (15th through 21st editions, 1941-1999), it has most recently been revised by Cornelius Klein and is currently available in the 22nd edition under the title of *Manual of Mineral Science*.

Another famous Dana is James Dwight Dana's son, Edward Salisbury Dana (1849-1935). A mineralogist and crystallographer like his father, E. S. Dana also made significant contributions to the mineral sciences. He published his *Textbook of Mineralogy* in 1877 and the sixth edition of his father's *System of Mineralogy* in 1892.

- Andrew A. Sicree, Ph.D.

Mississippi Valley-type Minerals

All too often, collectors will hear other mineral collector refer to a locality for sphalerite or galena as being "Mississippi Valley-type." The term is much over-used to the point of becoming meaningless.

Properly speaking, the term Mississippi Valley-type (MVT) is reserved by ore geologists for lead-zinc deposits in which the principal ore minerals are sphalerite (zinc sulfide) and galena (lead sulfide) and the host rock is typically a sedimentary carbonate rock (or a sandstone, perhaps). I'd add that a pure MVT should have simple mineralogy, be located in relatively undisturbed, un-metamorphosed host rocks, and have no obvious igneous heat source to form the ore minerals. This latter criterion would exclude the Illinois-Kentucky fluorspar district with its abundant fluorite and igneous heat source.

Unfortunately, the MVT name has become so broadly applied that it is becoming synonymous with "lead-zinc deposit".

The Upper Mississippi Valley district, located in southern Wisconsin, northern Illinois and eastern Iowa, serves as a prototype for MVTs. Unfortunately, all of the lead and zinc mines in the Upper Mississippi District are now closed and the district has been largely forgotten, although some fine specimens of galena and sphalerite still come out of old collections. Other MVT districts include the famous Tri-State District (in the area near Joplin, Missouri), and the Viburnum Trend (in Missouri).

It is interesting to note that the lead in all of these central U.S. districts is unusual in that it has a strong radiogenic component. This doesn't mean it is radioactive (it isn't), but rather that these districts' leads are enriched in the lead isotopes lead-207, lead-208, and lead-209. These lead isotopes are "radiogenic" because (unlike lead-204, the other abundant isotope) they are formed by the radioactive decay of uranium and thorium.

Radioactive uranium-238 decays by steps through a *decay series* that eventually produces stable (non-radioactive) lead-206. Likewise, radioactive uranium-235 generates stable lead-207, and stable lead-209 is produced at the end of the decay series of radioactive thorium-232. Sometimes highly radiogenic leads are referred to as "J-type" leads (for Joplin). The presence of J-type leads in a mineral is a clue that the lead may have been scavenged from a rock that originally contained some uranium and/or thorium.

Mississippi Valley Type lead-zinc deposits occur worldwide and currently account for somewhat less than one-fifth of the world's total production of lead and zinc.

- Andrew A. Sicree, Ph.D.

Dr. Andrew A. Sicree is a professional mineralogist and geochemist residing in Boalsburg, PA. ***Popular Mineralogy*** *provides technical answers to your general mineral questions. If you have a question you'd like to have answered, please send email to sicree@verizon.net*

Mineral Etymologies

Etymology, the study of word origins, gives us clues to the origins of the names of minerals.

***Cobalt, cobaltite*:** Each home, in Old German folklore, had its familiar spirit, called a *kobold*. This term was assembled from *kobe*, or cottage, plus the ending of *wield*, to rule, hence the *kobold* was the "ruler of the house." Gradually, this household spirit adopted a prankish or mischievous nature and was blamed for any mishaps such as spilled kettles or dropped plates. Among mining communities, the *kobold* took on a more malignant nature and was held to be the source of certain diseases. Thus when miners encountered minerals with metallic luster that, despite smelting, did not produce metal, they blamed the failure on the mining goblin or *kobold*. In the 1730s, Georg Brandt, a Swedish chemist, was able to extract a new metallic element from these reluctant minerals, and gave it the German name *kobold*, which became *cobalt* in English. *Cobaltite* is a cobalt iron arsenic sulfide mineral.

***Jade, nephrite*:** Centuries ago, jade was believed to prevent colic and cure kidney diseases. The Greek word for kidney, *nephros*, is the root of *nephrite*, the modern term for one of the two jade minerals, the other being *jadeite*. In the 1500's, Spanish Conquistadors encountered jade in use by many Mesoamerican cultures, and this "colic stone" was called *piedra de ijada* or "stone of the colic" in Spanish. The French shortened the Spanish term to *l'ejade* or *le jade, which* was further shortened in English to *jade*.

***Magnet, magnetite, lodestone*:** The town of Magnesia is located in Thessaly (Thessalia), the central part of the Greek mainland. In ancient times this town was the source of a black stone that had the unusual ability to attract iron metal. This "stone of Magnesia" or *lithos Magnetis* is the source of the modern term *magnet* and hence the mineral *magnetite*. The magnetite used in early magnetic compasses was called *lodestone* because *lode* was the Middle English term for "way" and the *lodestone*, used to make a compass, was the stone that pointed out the way.

***Nickel, niccolite*:** *Nickel* is an old Teutonic word for "demon" (recall that one nickname for the Devil is "Old Nick"). Early German copper miners occasionally

encountered metallic ores that, although they resembled the ores of copper, produced no metal when smelted. Thinking that a demon had possessed the ore, rendering it useless, they referred to it as *kupfernickel*, or "demon copper." A new metallic element was isolated from *kupfernickel* (the mineral *niccolite,* a nickel arsenide) in 1751 by Axel F. Cronstedt, a Swedish mineralogist. Cronstedt retained the German mining term and called the element "nickel".

Ref.: *Thereby Hangs a Tale*: *Stories of Curious Word Origins*, by Charles Earle Funk (Harper & Row, New York, 1950).

- Andrew A. Sicree, Ph.D.

Mineral Meanings

Meanings of some terms with mineralogical connections:

***To earn one's salt; to be worth one's salt*:** The word *salt* in these expressions can be connected to the word *salary*. To "earn one's salt" is to "earn one's salary…" Both *salt* and *salary* come from the same Latin word for salt: *sal*. In the Roman army, in addition to his pay, each soldier got a *salarium*, his "salary" which was an allotment to pay for the purchase of salt. Salt is vital to life and health; no soldier could function without it, especially in hot climates. Thus, a soldier not worth his salt was worthless.

Ref.: *Hog on Ice & Other Curious Expressions*, Charles Earle Funk (Harper & Row, New York, 1948).

- Andrew A. Sicree, Ph.D.

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Why does my barite smell so bad?

Trimming or cutting barite can be an odoriferous experience. Barite, and other minerals, may be "fetid," or foul-smelling when broken or scratched. This phenomenon occurs because you are breaking open fluid inclusions within the barite crystal.

Natural crystals are never completely pure. Many minerals form by precipitation from a water-rich fluid, and small amounts of the formational fluids can be caught up in the growing crystal. Geoscientists study fluid inclusions in quartz, calcite, barite, dolomite, and other transparent crystals because they preserve samples of ancient fluids and give clues to conditions (such as temperature and pressure) under which the mineral grew.

Fluid inclusions are microscopic "vugs" trapped within a mineral crystal. These vugs are small liquid-filled pockets that may also contain gases and/or solids.

Some fluid inclusions may be large enough to see with the naked eye, but most require a microscope. Many fluid inclusions are smaller than 0.1 millimeters across, and they can even be smaller than 0.001 millimeters in diameter. A mineral crystal may contain billions of fluid inclusions per cubic centimeter. This means that a one-inch by three-inch by three-inch crystal can contain more than 10 billion microscopic fluid inclusions.

Fluids in the inclusions are usually mostly salt water. Gases such as carbon dioxide or methane may occur in a gas bubble floating within the inclusion's fluid. Solids, such as crystals of halite (sodium chloride) or sylvite (potassium chloride), also can be found within some fluid inclusions.

In fetid barite, the inclusions contain a small amount of hydrogen sulfide. This foul-smelling gas (it has the smell of rotten eggs) is liberated from fluid inclusions when fetid barite is scratched or crushed. The inclusions are very small in volume so the total amount of hydrogen sulfide released is very small. But your nose is extremely sensitive to hydrogen sulfide; you can smell the gas at the parts per billion (ppb) level.

- Andrew A. Sicree, Ph.D.

Field Trips in Jan

We start off the month with the 39th Flagg Gem an
Mineral Show on Friday
Saturday and Sunday 7-9 from 9AM to 5PM each d
will feature jewelry,
gems,beads,fossils,minerals, and lapidary supplies
run by the Museum
Foundation of which I am a member. The parking a
admission are free.
It is located at Mesa Community College off Dobso
Road. Go to www.
Flaggshow.info for more information.

JANUARY 5. Wednesday to get green rocks at a si
of Florence. If you are interested in jewelry and wa
see old mines and look through tailings, this is the t
you. If you like green rocks, join us but do not expe
see a map because it is unpublicized. High clearan
be necessary, details later.

15. a Saturday, Barry Goldwater Military Range. Th
not a definite date be-
cause I must call in to see if they will be firing on th
This trip will be a good trip for your 4x4, a permit wi
needed, we will meet in Gila Bend and
I will call in all the needed information about the vel
and participants.

Details later. We will get agate, obsidian and jasper.

22. Sheep Crossing a Saturday to get purple saganitic agate or saganite and it
can be the best in the country but the road has made it one of the most remote
sites in Arizona. We go by way of 7 Springs on fr.24 to Bloody Basin and
beyond. Details later. (4x4)

26. A Wednesday the Quartzite Club has a claim on this spot so we try to stay
clear of it. This is the brightest red and white jasper that you will ever find.
We must go on a myriad of trails every time we go there and it was a miracle
that we ever found this place a few years ago. We give you maps and play follow
the leader in caravan. Details later.

If you are a real rock hound, then you will make at least one of these trips and
let us start the new year out right. Harry at rockharry@netscape.com

Rock Shows in January 2011

January 1 - February 28, 2011 Quartzsite
Desert Gardens Intl. Rock & Gem Show
P. O. Box 2818, Quartzsite, AZ 85346
1155 Kuehn Street, ¼ mile east of exit 17
Hours: 9-6
Admission and parking: Free
Dealers Contact: Sandi McAllister, 928-927-6361
Website: www.desertgardensrvpark.net
E-mail: dggemshow@ureach.com

January 7-16, 2011 Quartzsite
Tyson Wells, Rock & Gem Show,
Tyson Wells Showgrounds, 100 W. Kuehn St., SW Corner I -10 Freeway & Hwy 95, P. O. Box 60, Quartzsite, AZ 85346, 928-927-6364
Website: www.tysonwells.com
E-mail: tysonwells@tds.net
Admission and parking: Free

January 7-9, 2011 Mesa
Annual Flagg Gem & Mineral Show,
Mesa Community College, 1833 W. Southern Ave., west parking lot, Mesa, AZ
Sponsored by: Arizona Mineral and Mining Museum Foundation
Website: www.flagshow.info
Hours: Fri.-Sun. 9-5
Admission and parking: Free
Show Chairperson: Ray Grant, 480-814-9086, raycyn@cox.net
Dealers Contact: Lavone Archer, 480-969-0483, elabaso4@cox.net
Free samples and activities for children.

January 14-16, 2011 Globe
54th Annual Gila County Gem & Mineral Society Show, Gila County Fair Building, Hwy. 60, 3 miles north of jct. U.S. 60-70, Globe, AZ, 85501, Show site phone: 928-425-5924
Sponsored by: Gila County Gem & Mineral Society P.O. Box 487, Miami, AZ 85539
Hours: Fri., Sat. 9-5, Sun. 9-4
Admission: $2.00 donation, children free
Parking: Free
Show Chairman: Val Latham 602-466-3060, val65@cox.net

January 21-30, 2011 Quartzsite
Tyson Wells Sell-A-Rama, Rocks, Gem-Arts-Crafts. Tyson Wells Show Grounds, SW Corner of I-10 Freeway and Highway 95, Quartzsite, AZ
Website: www.tysonwells.com
Admission: Free
Show Chairperson: Kym Scott (at address below)
Dealers Contact: Tyson Wells Sell-A-Rama, P.O. Box 60, Quartzsite, AZ 85346, 928-927-6364 (mail 6-8 months ahead)

January 19-23, 2011 Quartzsite
Pow Wow Gem & Mineral Show
Located in the center of town on Mesquite & Ironwood Drives, Quartzsite, AZ
Website: www.qiaaz.org
Sponsored by: Quartzsite Improvement Assoc.
Dealers Contact: Donna Hiller, P.O. Box 881, Quartzsite, AZ 85346-0881, 928-927-6325, Fax, 928-927-4503
Admission and parking: Free

January 27 – February 12, 2011 Tucson
22nd Street Mineral, Fossil & Gem Show
600 22nd St. & I-10, Tucson
Hours: 9-7
Admission and parking: Free
Website: www.22ndstreetshow.com
Sponsored by: Eons Expositions
Dealers Contact: Christine at (516) 818-1228
Email: lowellcarhart@yahoo.com

January/February
For a listing of the satellite Tucson shows that run from January through February 2011:
Website: www.tucsonshowguide.com or www.VisitTucson.org