



EARTHQUAKE

e-Newsletter about what's movin' and shakin' at the Earth Science Museum

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ESM Outreach Update:

By Mardy Zimmermann

Our Best Year Yet!

For the July 2015 - June 2016 school year, we provided programs to 7,894 children at 62 schools which is an increase of 2,167 over the previous year. During that same time, we reached a total of 7,670 people at community events like rock and gem shows and science fairs which is an increase of 2,501 over the preceding year.

With the summer months upon us, outreach has slowed down a bit, but we still had some events scheduled. In July, we participated in two summer camps. A new group for ESM was at the Audubon Society in Phoenix, where sixteen young students made egg carton rock and mineral collections and had the chance to view fluorescent minerals. At the yearly summer camp the AZ Museum of Natural History (AZMNH) in Mesa sponsors, we engaged with 25 students discussing rocks and minerals. We also provided brachiopod fossils that the AZMNH requested for a project with developmentally disabled adults.

And, again this year, the Earth Science Museum has been awarded a \$3,500 grant from the Staples Foundation. These funds will assist us in providing a classroom and earth science displays in the revised Mining and Mineral Museum which will be transferred to the AZ Geological Survey soon. Much work, fundraising and planning will be happening after the transfer of the building in early August.

The AZ Geological Survey's plight garners local, state, national and even international attention and support!

By Shirley Coté

The Arizona Geological Survey (AZGS) has been in turmoil since January when Gov. Ducey announced his budget proposing the transfer of duties and responsibilities of the AZGS to the University of Arizona (UA). And, in May 2016, the governor signed SB1530 the agency consolidation; budget reconciliation; 2016-2017, a bill in which the AZGS was defunded and put under the auspices of the UA. With this transfer, the AZGS is no longer a state agency, and therefore required to move from its 10,000+ square foot state office space on Congress St. in Tucson to a 2,500 sq. ft. space at the Arid Lands Studies building at 6th St. and Campbell just east of the UA campus. The AZGS also had to close its Phoenix offices and move its contents to dead storage as there is no office space owned by UA to house them.

Recent articles in both Tucson and Phoenix newspapers and in local and national blogs have highlighted the AZGS's plight.

In Tucson on January 21st, Jonathan Duhamel of the *Arizona Daily Independent* wrote an article entitled "Governor Proposes Transferring Arizona Geological Survey to University of Arizona-Bad Idea." Jonathan's article can be read at:

<https://arizonadailyindependent.com/2016/01/21/governor-proposes-transferring-arizona-geological-survey-to-university-of-arizona-bad-idea/>.

Also in Tucson on May 26th, Tom Beale of the *Arizona Daily Star* wrote an article entitled “State geologists moving to UA, facing layoffs” The full article can be found at:

http://tucson.com/business/local/state-geologists-moving-to-ua-facing-layoffs/article_25c05d6d-2b00-529b-a774-0bb8cadd701a.html.

A similar article was printed in the *Arizona Capitol Times* in their May 31st edition at:

<http://azcapitoltimes.com/news/2016/05/31/state-geologists-face-financial-crunch-with-move-to-ua/>.

In Phoenix, a letter to the editor from David Briggs of the AZ Geological Society was published in the June 16th *Arizona Republic*. In his letter he states: “The governor’s efforts to consolidate state government have placed this healthy, productive state agency on life support, and its prognosis is grim. The Arizona Geological Survey’s supporters do not understand how the decision to eviscerate this agency best serves the needs of Arizonans.”

David’s full letter can be read at:

<http://www.azcentral.com/story/opinion/oped/2016/06/15/my-turn-arizona-geological-survey-life-support-and-needs-publics-help/85848418/>.

Additionally, the Arizona Geological Society’s website has an informative article on the former AZ Mining and Mineral Museum and on the uncertain future that the Arizona Geological Survey is currently facing. To view the both articles go to:

<http://www.arizonageologicalsoc.org/>.



Photos courtesy of the AZ Geological Society website

Vanessa Barchfield of *Arizona Public Media* ran a short piece on the AZ Geological Survey at

<https://news.azpm.org/p/sci-tech-azpm/2016/7/1/91133-arizona-geological-survey-folds-into-ua-campus/>.

On Richard Zimmermann’s blog, Mineral Museum Madness (minmumad@blogspot.com) a guest post entitled “The so-called agency consolidation of the Arizona Geological Survey (AZGS) is a SHAM” was posted and introduced as follows: A condensed version of the following guest post was also published as a letter to the editor in the June 17th paper copy of the *Arizona Republic*. In the newspaper, the title of the letter was “Arizona Geological Survey saddled with impossible tasks.” The full letter to the editor can be read at: <http://minmumad.blogspot.com/2016/06/azgs-challenges.html>.

On the national level, *Scientific American* magazine blogger Dana Hunter posted a piece on the SciAM blog Rosetta Stone, entitled, “Help Save the Arizona Geological Survey,” with the subtitle “The Arizona Geological Survey’s budget has been slashed by the state’s short-sighted government.” The full article can be read at: <http://blogs.scientificamerican.com/rosetta-stones/help-save-the-arizona-geological-survey/>.

Also on the national level, the American Geophysical Union’s *Eos Earth & Space Science News* reported “New Law Puts the Squeeze on the Arizona Geological Survey” <https://eos.org/articles/new-law-puts-the-squeeze-on-the-arizona-geological-survey>.

And, on the international level, Matthew Loader, a geologist from the Natural History Museum in London, copied the AZGS on a letter he sent to Gov. Ducey opposing the defunding of this valued agency. A copy of his letter is posted with the June 26th Arizona geology blog at: <http://arizonageology.blogspot.com/2016/06/letters-op-eds-and-blogs-express.html>.

It’s not too late to add your voice of support for the AZGS, write a letter to the governor; to your state legislators; to your local editor; or put your thoughts on social media and share, share, share. Those who may be interested in supporting the AZGS financially are encouraged to contact the Arizona Geological Survey at 520-621-2470 to see how they can help.

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The Book Brigade



The Great Library Shelving Project

Over two dozen volunteers joined Mike Conway of the AZ Geological Survey (AZGS) Tuesday, July 5, 2016, to help unload thousands of volumes of the AZGS's library holdings onto temporary shelving at the former mining and mineral museum building at 15th Ave. and Washington in Phoenix. Some of these volunteers were former AZGS employees forced to either retire or be laid off due to the transfer of the agency to the University of Arizona. (Now that is dedication!)

As one person removed books from a gondola, two, three, or more volunteers formed a book brigade passing the books along the stacks for the last person to shelve them. The volunteers made short work of re-shelving the estimated 10,000 volumes finishing up in less than 2½ hours.



Diane Bain, retired AZGS employee, suggests that taller volunteers man the stacks as others pass books along to be shelved.
Shirley Coté photo



Members of the book brigade take a break to pose at the former AZ mining and mineral museum building.

Mike Conway photo

YOUR SUPPORT FOR THE AZGS REQUESTED

The Arizona Geological Survey (AZGS) is pulling together a list of individuals and groups with an interest or stake in the opening of the Mining, Mineral and Natural Resources Educational Museum. As you may know, possession of the Mining and Mineral museum building and mineral collection passes from the AZ Historical Society to the AZGS on August 6th. The AZGS is strategizing now and identifying stakeholders in advance. If you are interested in receiving regular updates, please contact Michael Conway directly by phone (520-621-2352) or e-mail fmconway@email.arizona.edu.

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Arizona Rocks 38

Text and photos by Ray Grant

A few years ago, I got a few specimens with fibrous balls of a turquoise colored mineral that I did not recognize. I gave a specimen to Peter Williams from Sydney, Australia, who is one of the world's leading experts on Copper minerals.

He determined the turquoise material to be a new mineral. Well not exactly new, similar material was described by Wayne Leicht (Owner of Kristalle) as unknown number 5, but there was not enough data available to have it approved as a new mineral. Peter and his co-authors worked on the mineral and submitted it to the International Mineralogical Association for approval. It was accepted as a new mineral and given the name grandviewite after the locality. This is one of the 76 type minerals found in Arizona that I discussed in the last column.

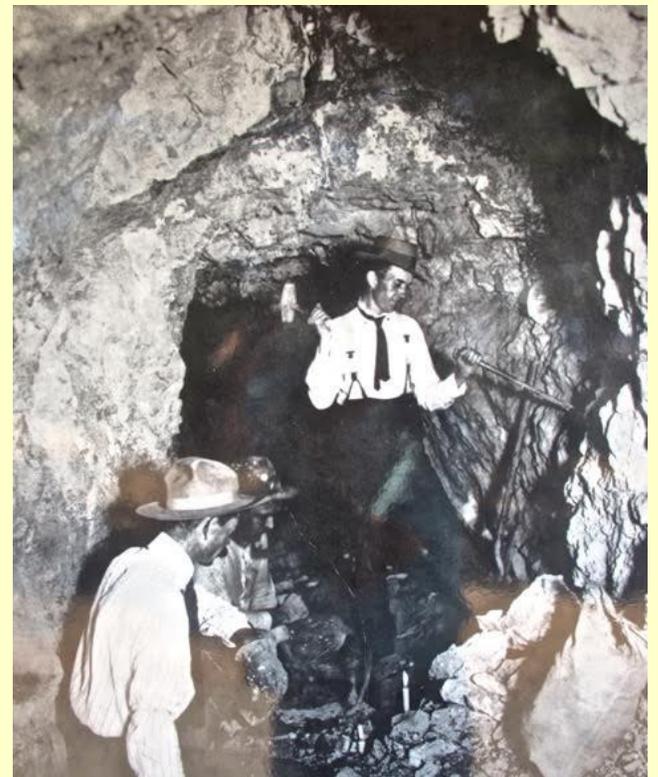
Grandviewite has the formula $Cu_3Al_9(SO_4)_2(OH)_{29}$. It occurs as radiating greenish blue sprays of acicular laths up to 0.5 mm in length. It is monoclinic, has a hardness of 2, and a density of 2.8. It occurs with chalcoalumite, cyanotrichite and carbonate-cyanotrichite in vugs in a goethite rich gossan.

Unfortunately, the Grandview mine is in the Grand Canyon National Park and therefore is off limits to collecting. You can hike the Grandview trail as a day hike or get a permit to camp overnight. I have not been to the Grandview mine in many years. The last time I was there, the mine had an ore cart in one of the tunnels running on track and you could push it around. I marvel at how they got it there over a hundred years ago. Now there is a locked gate on the mine entrance to keep people out and let the bats

go in and out. The mine is located on Horseshoe Mesa and there is also an interesting cave there, the Cave of the Dome. One of the domes has names that people wrote there over the years, including the Kolb brothers. That is history, but if you wrote in there today it would be graffiti.



Horseshoe Mesa (bottom of photograph) from Grandview Point overlook on the South Rim. The Grandview mine is the small light colored area at the beginning of the mesa.



Photograph of early miners in the Grandview Mine from the Park Service information at Grandview Point overlook parking area.

AZ Rock & Gem Shows

Prescott Gem and Mineral Show and Sale

August 5-7, 2016

Fri. & Sat. 9-5, Sun. 9-4

Admission Fee

Free Parking

Prescott Valley Event Center
Prescott, AZ

Summer Sale at 8th Annual
Gilbert Mineral Show 2016

Saturday, August 27, 2016

10am to 3pm

Gilbert Historical Society Museum
Details to be announced

Mingus Gem and Mineral Club Annual Show and Sale

Sept. 30, Oct. 1-2, 2016

Fri. & Sat. 9-5, Sun. 10-4

Admission \$3, Children under 12 Free

Cliff Castle Casino

555 W. Middle Valley Rd.
Camp Verde, AZ

West Valley Rock & Mineral Club Helzarockin' Gem & Mineral Show

Friday - Sunday, October 7-9, 2016

9-4 daily

Admission \$3

Children under 12 free

Helzapoppin' Arena

802 N. 1st Street (Miller Road)
Buckeye, AZ

Huachuca Gem & Mineral Club Annual Gem Mineral & Jewelry Show

October 8-9, 2016

Sat. 9-5, Sun. 10-4

Free Admission

Cochise College

900 Colombo Ave.

Sierra Vista, AZ

High Desert Helpers Rock-A-Rama

November 4-6, 2016

Fri., Sat., Sun. 9-4

Free Admission

High Desert Park

19001 E. Jacie Lane

Black Canyon City, AZ

Payson Rimstones Rock Club Annual Show and Sale

November 19-20, 2016

Sat. 9-5, Sun. 10-4

Admission \$2, Children Free

Payson High School

Longhorn Gym

310 S. Mclane Rd.,
Payson, AZ

Wickenburg Gem and Mineral Show November 26-27, 2016

Sat. 9-5, Sun. 10-4

Admission Free

Hassayampa Elementary School

251 S. Tegner St.

Wickenburg, AZ

ENJOY A ROCK AND GEM SHOW!



JOIN or VISIT THESE AMAZING CLUBS AND MUSEUMS



THE MINGUS GEM & MINERAL CLUB, INC
COTTONWOOD, ARIZONA

Mingus Gem & Mineral Club
www.mingusclub.org

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THE UNIVERSITY OF ARIZONA GEOSCIENCES

THE UA MINERAL MUSEUM



WICKENBURG GEM AND MINERAL SOCIETY

ESM's Upcoming Meeting

The Earth Science Museum's next scheduled Board meeting on August 9, 2016, at the Burton Barr Library, located near Central Ave. and McDowel in Phoenix at 6:30 p.m. in Rm. B. Everyone is welcome to attend.

BECOME A MEMBER!
Join the Earth Science Museum's



IS IT TIME TO RENEW YOUR MEMBERSHIP?
Please renew today!

----- cut here -----
**ESM Earth Science Investigation
 Team Membership Form**
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Membership levels:
 _____ **ESI Family \$20**
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Membership benefits:

- ◆ Monthly e-newsletter *Earthquake*
- ◆ Official team membership card
- ◆ Knowledge that your contribution is making a difference in earth science education.

MANY THANKS TO OUR MAJOR DONORS!

- AZ Leaverite Rock & Gem Society
- Flagg Mineral Foundation
www.flaggmineralfoundation.org
- Friends of the AZ Mining & Mineral Museum
- Maricopa Lapidary Society
<http://maricopalapidarysociety.com/>
- Mineralogical Society of AZ
www.mineralogicalsocietyarizona.org
- White Mountain Gem & Mineral Club
www.whitemountain-azrockclub.org
- Wickenburg Gem & Mineral Society
<http://www.wickenburggms.org>
www.facebook.com/pages/Wickenburg-Gem-and-Mineral-Society/111216602326438
- Staples Foundation
www.staplesfoundation.org
- Anita Aiston
- Stan & Susan Celestian
- Russ Hart
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We're on the Web!

Visit us on  and at:
www.earthsciencemuseum.org

Mission

Our Mission is to excite and inspire all generations about earth sciences through educational outreach.

Vision

We envision a community where students and the general public have curiosity about, passion for, and understanding of the underlying principles of earth sciences.

For more information about the ESM, how to become a member or how to arrange for a school visit or Community function, go to:
www.earthsciencemuseum.org.

Please join us at the next ESM Board meeting Tuesday, August 9, 2016, at the Burton Barr Library in Phoenix at 6:30 p.m. Rm. B.

THANK YOU FOR YOUR CONTINUING INTEREST & SUPPORT!!!

**EARTH SCIENCE MUSEUM
NON-PROFIT BOARD OF DIRECTORS**

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