

WCGMC News

January, 2014



Christmas Party, 2013 (see pg. 2)



Happy New Year



Agaricocrinus calyx from Dale Hollow Lake in north central Tennessee (see page 4 for "the rest of the story")

January 10th, 7:00 PM
Park Presbyterian Church in Newark

- Come join us start to plan our 2014 field season, tell us where would you like the club to go to collect minerals and fossils?
- Bill and Rita Lesniak will show a slide presentation entitled: "ALASKA (by Land and Sea)" or "from Fairbanks to Vancouver"



from Fairbanks

to Vancouver



WCGMC - Always Looking for Places to Dig!



WCGMC Christmas Extravaganza, December 13, 2013



Bill Chapman "digs" for berries at the dessert table.



Crinoids (below, not above!)



Bill Lesniak, Linda Schmidt, Bill Chapman, and Steve Richman enjoying the fossil spread Linda brought from her trip to Tennessee (see page 4).



MINERALS ON STAMPS

Fred Haynes
December 13, 2013

Photos by Fred Haynes

The evening's presentation ==>





Mineral Musings by Fred Haynes



Happy New Year.

Has everyone made their New Year's Resolutions? You know, the one's you keep until you can't anymore. Here are mine:

- 1) I resolve to attend as many rock, mineral, and fossil collecting trips with WCGMC as possible (that should be easy to keep).
2. I resolve to clean up, organize, and label specimens from each trip before the next trip (now that would be a first for me).
3. I resolve to lose 15 pounds during next year's gardening and collecting season (I manage to do this most years).
4. I resolve not to gain those pounds back during the hibernating/eating season that follows the summer (trouble is I fail this every year such that resolution #3 becomes necessary every year).

Maybe we should share resolutions at an upcoming club meeting? Or the next time we are in the field.

Our fearless trip leader, Bill Chapman, tells us that one early trip will be April 1 with a visit to Ace of Diamonds in Herkimer. I guess that is as fitting a day as any for folks with our hobby to be "hunting diamonds." Most of you are well acquainted with digging in the Cambrian dolostones of Herkimer County. For me this will be a new treat. I have been there once, but decades ago and only briefly. I'll be looking for a few 3 inch crystals on matrix that look like this !



Upcoming Shows and Events

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| <p>21st Annual James Campbell Memorial Gem, Mineral, and Fossil Show Sponsored by <i>Capital District Mineral Club & New York State Museum</i> February 15, 2013 10:00–5:00 PM February 16, 2013 10:00–5:00 PM</p> <p>New York State Museum 222 Madison Ave., Albany, NY</p> | <p>46th Gem, Mineral, and Fossil Show Lapidary: "The Magic of Cut Stones" Sponsored by <i>Buffalo Geological Society</i></p> <p>March 22, 2013 10:00–6:00 PM March 23, 2013 10:00–5:00 PM</p> <p>"The Fairgrounds", Market and Grange Bldgs., Hamburg NY</p> | <p>45th Annual Gem and Mineral Show Sponsored by <i>Che-Hanna Rock & Mineral Club</i></p> <p>March 22, 2013 9:00–6:00 PM March 23, 2013 10:00–4:00 PM</p> <p>Athens Township Vol. Fire Hall 211 Herrick Avenue, Sayre, Pa.</p> |
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Fossil Collecting in Tennessee

In mid-November, Linda Schmidtgall and her husband Les made one last collecting trip before winter. And they were smart; they pointed their fossil hauling Chevy pickup south and travelled to north central Tennessee to hook up with the Knoxville Gem and Mineral Society and the Georgia Mineral Society on their annual fall crinoid and coral "harvest". Fossil hunting along the shorelines of the Tennessee and Kentucky lakes is best when the water level is lowest in late fall and crinoid fossil remnants can be collected by the bucket full. Stem sections, or cemented crinoidal hash locally referred to as crinoidal plates, can be collected along the shoreline or just below the water line. All are fully silicified into grey or light bluish chalcedonic chert (see photo of crinoid stems in the Christmas collage, pg 2)

The crinoidal debris around Dale Hollow Lake is from the Fort Payne Formation of Middle Mississippian age. A number of large stemmed crinoids thrived in the seas that covered the Tennessee-Kentucky region in the Upper Mississippian Epoch some 320 million years ago. Krivicich (2011) reported that the most common genus from three sites on Dale Hollow Lake is *Agaricocrinus*. Without the calyx, species identification is not possible. *Actinocrinites* is another common genus.



Silicified Crinoid Stems from Tennessee

Crinoids are marine animals from the Class Crinoidea of the Phylum Echinodermata. Most prehistoric crinoids attached themselves to a substrate with a flexible, circular, segmented stem. Above the stem food filtering arms extend from a cup-shaped body (or calyx). The stem length and calyx size are species specific, but also vary based

on the environment. The stems grow as needed to access planktonic nourishment. The broken and segmented stems were comprised of calcite and therefore commonly preserved in the rock record. The softer tissues of the calyx and arms require rapid soft sediment burial to be preserved and are seldom found intact. Although the 30 or so collectors with Linda found stem sections in abundance, there were only 10 identifiable calyces found and Linda found two of them! One shows the pentagonal character of *Agaricocrinus* (see photo on page 1). The other may be *Actinocrinites*.

At a second spot, colonized corals were conveniently located in outcrop exposure near Byrdstown, Tn. Silicified and somewhat iron stained, these small coral colonies grew with bryozoans in carbonate mounds offshore from the Appalachian Highlands that were rising to the south and east in Mississippian times.



One of Linda's colonized corals from Byrdstown, TN. Individual corals are 0.5 to 0.8 inches in diameter.

Want to know more about crinoids?

Because of their uniformity, pieces of crinoids stems have been threaded onto necklaces for over 1000 years. In England, they are often referred to as St. Cuthbert's beads (or Cuddy's) because of their historic importance in medieval Northumberland. Their use in rosaries can be traced back to the 12th century, but at that time their origin was assigned to snakes or "devil's toes". Naturalist Martin Lister came closer to the truth when he labeled them as "petrified plants" in 1673.

The final stop on the Tennessee trip was for small geodes in a cove along Dale Hollow Lake. The quartz and calcite crystals within the geodes are small and coated with a thin milky film that detracts from their overall appearance. That is until they are subjected to a black light. It seems that the fine, dusty-like film coating the geode filling crystals shows a nice blue-white to short-wave UV. Linda added to her fossil collection and to her fluorescent collection at the same time. All while the rest of us were shoveling early snow back here in upstate New York.

TUMBLING SILICIFIED FOSSILS

The Memphis Archeological and Geological Society published a "recipe" for tumbling silicified crinoids and other small fossils in their 2006 newsletter (now on their website). They recommend 18-21 days with a 60/90 ungraded bit in a rotary tumbler, then 3-4 days in a vibrating tumbler with 400-600 grit and then a 3-4 day final polish with cerium oxide. Linda did not wish to lose detail so she decided to skip step one and was very happy after 3 days in a vibratory

tumbler with 600 grit and then one day in the tumbler with a polishing grit. She'll have some to show us at future meetings.

Want to know more about silicification?

The formation of chert layers and nodules and the silicification of fossils such as crinoids within limestones is an interesting process. Silica released from the weathering of silicate rocks is transported in solution where it fills the pores of the limestone and fossils. As the water evaporates with burial, a siliceous gel is formed and with further dehydration, opal ($\text{SiO}_2 \cdot x\text{H}_2\text{O}$) will begin to encase and replace the carbonate mineralogy of the limestone. With continued access to silica-laden waters, nodule growth or fossil replacement can proceed to completion. The transformation of carbonates to chalcedony/chert occurs via dissolution and reprecipitation processes that are controlled by time and temperature as well as access to silica-laden groundwaters.

REFERENCES

- Greb, S. F., et. al., 2008**, Mud Mounds, Paleoslumps, Crinoids, and More; the Geology of the Fort Payne Formation, at Lake Cumberland, south-central Kentucky, KY chapter of the AIPG Fieldtrip guide, 46 p
- GMS Dale Hollow Lake Field Trip, 2012**, Georgia Mineral Society webpage, <http://www.gamineral.org/ftreports2012.html>
- Krivicich, E. B., 2011**, Paleocommunity analysis of crinoids from the Fort Payne Formation (Late Osagean, Mississippian) with localities in Kentucky, Tennessee, Alabama, M.S., The Ohio State University
- McDaniel, W.C., 2006**, Tumbling Fossils, Rockhound News, Memphis Archeological and Geological Society, v. 52, #9.
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Club meets 2nd Friday of each month.
Mini-miner meeting at 6:30 PM.
Regular meeting at 7:00 PM
Park Presbyterian Church, Maple Court, Newark, NY
Website – <http://www.wcgmc.org/>

Dues are only \$15 individual or \$20 family for a full season of fun. Send to WCGMC, P. O. Box 4, Newark, NY 14513