



Volume 63 ◊ Number 01 ◊ January 2017 ◊ A monthly newsletter for and by the members of MAGS

Mapping Prehistoric Tool-stone Use

Ryan M Parish, Ph. D.

January Program

Department of Earth Sciences, The University of Memphis



The focus of my talk will be understanding prehistoric behavior from understanding where on the landscape they obtained chert to use for manufacturing stone tools. I'd like to briefly summarize: 1) my work on creating a chert type database for the Southeast

(to date consisting of close to 5,000 samples from approximately 170 deposits), 2) sourcing chert artifacts back to the location on the landscape where people got the resource, and 3) I'll wrap things up with some of the recent groups of artifacts *Continued, P. 5*

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PUBLIC COMMENTS

LINDA MCCALL, PRESIDENT, NORTH CAROLINA FOSSIL CLUB

The Paleontological Resources Protection Act (PRPA) was signed into law on 30 March 2009, and federal agencies were tasked with writing their own rules for how they would put the law into effect. The rules for the U. S. Forest Service went into effect on 18 May 2015. Now, the Bureau of Land Management (BLM) has finished the draft of its rules, and it is open for comments until 6 February 2017.

The next paragraph is an announcement from Scott Foss of the BLM and Vincent Santucci of the National Park Service. The proposed regulation under the fossil law known as "PRPA" is available for public comment. This is a critical opportunity to carefully read the proposed regulation and thoughtfully make lawmakers aware of your viewpoint. Don't miss this chance to

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MAGS Rockhound News ◇ A monthly newsletter for and by the members of MAGS

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MAGS AND FEDERATION NOTES

Memphis Archaeological and Geological Society, Memphis, Tennessee

The objectives of this society shall be as set out in the Charter of Incorporation issued by the State of Tennessee on September 29, 1958, as follows: for the purpose of promoting an active interest in the geological finds and data by scientific methods; to offer possible assistance to any archaeologist or geologist in the general area covered by the work and purposes of this society; to discourage commercialization of archaeology and work to its elimination and to assist in the younger members of the society; to publicize and create further public interest in the archaeological and geological field in the general area of the Mid-South and conduct means of displaying, publishing and conducting public forums for scientific and educational purposes.

MAGS General Membership Meetings and MAGS Youth Meetings are held at 7:00 P. M. on the second Friday of every month, year round. The meetings are held in the Fellowship Hall of Shady Grove Presbyterian Church, 5530 Shady Grove Road, Memphis, Tennessee.

MAGS Website: memphisgeology.org

MAGS Show Website: www.theearthwideopen.com

We aren't kidding when we say this is a newsletter for and by the members of MAGS. An article with a byline was written by a MAGS Member, unless explicitly stated otherwise. If there is no byline, the article was written or compiled by the Editor. Please contribute articles or pictures on any subject of interest to rockhounds. If it interests you it probably interests others. The 15th of the month is the deadline for next month's issue. Send material to lybanon@earthlink.net.

January DMC Field Trip

WHERE: Diamond Hill Mine, Antreville, SC (fee site)

WHEN: Saturday, January 28, 8:00 A. M. to dusk

COLLECTING: smoky quartz, amethyst, several other varieties of quartz, garnets, mica, epidote

INFORMATION: Angela Valvasori, (803) 960-6667 or
thebears@earthlink.net

Links to Federation News

- ➔ AFMS: www.amfed.org/afms_news.htm
- ➔ SFMS: www.amfed.org/sfms/
- ➔ DMC: www.amfed.org/sfms/dmc/dmc.htm

President's Message

Hello, everyone. Happy New Year! Welcome to 2017. I just want to say thank you for all the support I have received so far as your new president. I am both happy and honored. Since W. C. has been such an excellent leader, setting us in the right direction and on a good course, this job should be easier for me. Our Board is also very competent. We have an outstanding MAGS family, and I am pleased to be part of it.

As always, the upcoming April 22-23, 2017, MAGS Mineral, Fossil, and Jewelry Show should be in the forefront of everyone's mind. I can't say it enough: the Show is our moment to shine! It is the single most work-intensive thing we do. It is also our best venue for showcasing MAGS, as well as our best source of revenue. So please think about ways you can help make this year's Show better.

We are still looking for someone to step forward and help with the Junior Program. Please call me if you are interested. If you can't serve as the Junior Program Director, maybe you could take responsibility for presenting one or two programs. We need help with this. If we are unable to identify a program director, I will put out a list and ask for monthly volunteers.

I am hoping to have a great year, I welcome any and all ideas. If you have any questions or suggestions, you can call me between 2:30 P. M. and 9:00 P. M. weekdays or after 10:00 A. M. on weekends. My number is (901) 626-4232. If you like, you can also

e-mail me anytime at hunter3006@aol.com.

Thanks,

Charles

Acclaim for Your Newsletter

Results from the 2016 Bulletin Editor's Contest are in; *MAGS Rockhound News* did well thanks to the people who contributed to it. (The 2016 contest involved publications from 2015.) Editors submitted material to their regional federations, in our case the Southeast Federation of Mineralogical Societies (SFMS). Our entries were judged against submissions from other SFMS clubs (there are more than 80, from seven states). Each regional federation sent the top three finishers in each category to the national federation, the American Federation of Mineralogical Societies (AFMS), where the SFMS entries were judged against the best from the other six regional federations.

The results are shown below. Thanks again to all those who helped make *MAGS Rockhound News* a winner.

Adult Articles

Mike Baldwin, "Fluorescent Minerals: Trick or Treat?" (November 2015)

SFMS—1st Place

Matthew Lybanon, "Quartz—Electrifying News" (March 2015)

SFMS—2nd Place

Amber Dunn, "Plastoglomerates from the Anthropocene?" (October 2015)

SFMS—3rd Place

Carol Lybanon, "Tools for Safe Rockhounding" (October 2015)

SFMS—10th Place

Bill Gilbert, "Collecting Pyrite at Navajun" (January 2015)

SFMS—Honorable Mention

Donna Budynas, "Ptero Goes to Hutchison" (June 2015)

SFMS—Honorable Mention

James Johnson, "Clement Museum 2015 Annual Show & Dig" (August 2015)

SFMS—Honorable Mention

Lori Carter, "More Than Tiny Rocks" (September 2015)

SFMS—Honorable Mention

Adult Articles-Advanced

Alan Schaeffer, M. D., "The Necessity Of Eye Protection" (November 2015)

SFMS—3rd Place

Feature Articles-Written

Robert Connolly, "What's Happening At Chucalissa?" (January 2015)

SFMS—2nd Place

AFMS—Honorable Mention

Susan Thompson, "New Window" (March 2015)

SFMS—4th Place

Kim Hill, "Just A Little 'bout Jonesboro" (January 2015)

SFMS—5th Place

Debbie Schaeffer, "Drinks All Around" (March 2015)

SFMS—Honorable Mention

Charles Hill, "Field Trip Report" (July 2015)

SFMS—Honorable Mention

W. C. McDaniel, "President's Message" (July 2015)

SFMS—Honorable Mention

Matthew Lybanon, "Floods and Archaeology in *Continued, P. 4*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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Acclaim for Your Newsletter
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Tennessee” (December 2015)
SFMS–Honorable Mention

Special Publications

Sherrri and Mike Baldwin, “Don’t Pick Up A Stick If It Moves!” (September 2015)

SFMS–1st Place
AFMS–3rd Place

Matthew Lybanon, “Tule Springs” (January 2015)

SFMS–2nd Place
AFMS–4th Place

Bob Cooper, “One Member’s Approach to Climbing” (September 2015)

SFMS–Honorable Mention

Large Bulletins

MAGS Rockhound News, May 2015 issue

SFMS–1st Place
AFMS–10th Place



Public Comments make your voice heard.
Continued from P. 1

The Department of the Interior proposed regulation under the Paleontological Resources Preservation Act of 2009 (PRPA) has been scheduled for publication in the Federal Register on Wednesday, December 7. The proposed regulation will be available for public inspection and comment until Monday, February 6, 2017. Starting on December 7, you may navigate your browser to www.blm.gov/paleontology for links to the proposed rule and

Library Report

Leah Gloyd

Happy New Year, MAGS Members!

A new year full of amazing adventures to come within our club. To all Members, old and new: Hello! I'm Leah, your Librarian for 2017, and I can't wait to have some fun with you all!

For many people, a new year means making resolutions or goals. Maybe that includes reading more or learning something new? Maybe not, but now that we've mentioned it...

So, allow me to tell you about one of the awesome perks of your membership; free, all-inclusive access to our club's library! It is full of over 500 books and resources and is available to you at every club meeting (excluding our Rock

Swap months of May and August.) Books in our library are available for checkout for up to 2 months at a time! We have books regarding an astounding variety of



archaeological and geological topics and it's FREE with your yearly membership! Literally, come check it out!

P. S.: We accept donations to our library year round, so if you need to lighten your load (or know someone who does) contact me for details. I'm also here to answer any questions regarding your library benefits. See you soon!

other helpful documents, or navigate directly to the Federal Register at <https://www.federalregister.gov/> and search for Regulation Identification Number 1093-AA16.

January Birthdays

2	Justin Coulson	23
3	Mary Kratz	24
6	Nick Fowler	28
	Julie A. Gilbert	29
7	Rosie Crawford	30
8	Richard Ervin	31
10	Noa Parks	
11	Sarah Stockwell	

Grayson Herbert
Vincent Schultz
Francis 'Mitch' Mitchell
Brandon Hubble
Tricia Spence
Ricky Waters
Brooke Ledbetter
Richard Gunter
Amber Gonzalez
Matthew Smith
Zoe McGregor
Dr. Jon Stanford
Lannah Ferri
Brady Gull
Mary Rauzi
Teressa Noyes
Abigail Loyd

*Mapping Prehistoric Tool-stone Use
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and cultures I'm looking at to give concrete examples about how understanding where people got chert from can give us information about how they lived.

Attention MAGS Members

Bob Cooper

Now is the time to start thinking about renewing your MAGS membership for 2017. Some Members have already renewed and you can also. Remember, the MAGS membership runs from January 1 to December 31. The membership fees for 2017 are:

- ★ **\$25.00 (Family)**
- ★ **\$15.00 (Individual-this is a change)**
- ★ **\$10.00 (Junior)**

You can renew at the MAGS Membership Meetings or by mail. When renewing by mail, make your check payable to **MAGS** and mail to **Bob Cooper, 8695 Baylor Rd., Arlington, TN 38002**. Those of you who have already renewed or will renew by the end of the January 2017 Membership Meeting will have a chance to win a fossilized bivalve scallop. The drawing for the fossilized bivalve scallop will be held at the end of the January 2017

Membership Meeting. You do not need to be present to win.



Fabulous Tennessee Fossils

Dr. Michael A. Gibson,

University of Tennessee at Martin

FTF 24 — Tennessee Namesake Index & Guide Fossils: *Ceratopea tennesseensis*



In this article we focus on the only molluscan index fossil listed in Shimer and Schrock's (1944), *Index Fossils of North America* with a *tennesseensis* epithet, a gastropod: *Ceratopea tennesseensis* (Figure 1).

The genus *Ceratopea* was coined described in 1911 by E.O. Ulrich for specimens in eastern North America, Greenland, and Scotland (E.O. Ulrich, 1911 *Revision of the Paleozoic Systems*. Geological Society of America Bulletin 22:281-680), but did not include Tennessee specimens at that point. The type specimen designated by Ulrich was *C. keithi*. It is considered an index fossil to the Ordovician, specifically the Lower Ordovician, and can be found from Tennessee to Missouri and into West Texas. *Ceratopea* was named in a somewhat unusual manner in that the actual coiled gastropod shell was not known at the time. Rather, Ulrich named the fossil based upon the operculum only. Gastropods (snails), mostly have coiled shells and are

Kingdom Animalia
Phylum Mollusca
Class Gastropoda
Subclass Prosobranchia
Order Archaeogastropoda
Family Ceratopeidae Yochelson and Bridge, 1957
Genus <i>Ceratopea</i> Ulrich, 1911
Species <i>tennesseensis</i>

generally considered “univalved”, but this is actually not entirely correct.



Gastropods also have a “trap door” that seals off the opening of the snail shell when the body is retracted up into the whorls

(“operculum”). The trap door can be mineralized, although usually less well so than the rest of the gastropod shell. Except in the case of these Ordovician snails, the operculum was much more calcified, resembling a slightly curved bullet. Additionally the operculum may also have been constructed of the more stable calcite rather than aragonite polymorph of calcite, thus making it more preservable.

As it turns out “Canada’s First Paleontologist” Elkanah Billings (1820-1876) had described three fossil opercula with

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Fabulous Tennessee Fossils similar
Continued from P. 5 features in
1859 as

belonging to the genus of snail he called *Maclurites* (Billings placed his fossils within the Silurian period, but it should be remembered that the Ordovician Period would not formally be named for twenty more years in 1879), some of which were later shown to be species of *Ceratopea* by Charles R.L. Oder (1932, Fossil Opercula From the Knox Dolomite, American Midland Naturalist, 13(3):133-153) used opercula found in the Knox Dolomite of Eastern Tennessee to re-evaluate all of these opercula and proposed standard terminology for their description along with recognizing ten new species (nine of which were found in Tennessee). Oder erected *Ceratopea tennesseensis* noting that *C. tennesseensis* is distinguished from other species by the shape of its muscle pit or pits and its peculiar tusk-like overall shape. Oder himself is another Tennessee mystery as very little is available on him biographically. He was employed by the State of Tennessee to map lead zinc occurrences and mapping in eastern Tennessee, suggesting he was a geologist more than a paleontologist. In writing this article I checked into my library of field book scan and see I have three of Oder's field books for this project, so perhaps I can find some mention of these fossils in his notes.

New Members

Leo Koulogianos
Jan Harris
Brooke Ledbetter
Christine Ledbetter

Richardson Landing Finds



New MAGS Member Leo Koulogianos sent this picture of petrified wood, coral, and various other rocks he found on a recent Richardson Landing field trip. Thanks, Leo. People love pictures like this. Let's hope other Members get the idea.

November Board Minutes

Bonnie Cooper for Mike Baldwin

Called to order 6:30. Present: W. C. McDaniel, Charles Hill, Carol Lybanon, Matthew Lybanon, Bob Cooper, Bonnie Cooper, James Butchko, Kim Hill, Debbie Schaeffer.

Secretary: Mike distributed minutes via email. Mike was absent but Bonnie distributed hardcopies. Minutes approved, one correction.

Treasurer: Bonnie emailed copies of the October checking register and the October summary to all Board Members. Treasurer's Report approved. She requested all Board Members to think about what amounts they would like budgeted for their positions for 2017. Checks for Chucalissa and Ronald McDonald House have been written.

Membership: Bob advised we have 2 new Members and have started to receive some renewals. A notice was emailed to the whole club advising it is time to renew and that those who renewed would be entered in a drawing for a fossilized bivalve scallop shell. This same notice plus a picture of the shell will be in the November, December, & January newsletters. We

will also email another renewal notice to the whole club in November & December. Ron & Letitia Brister are our latest Lifetime Members.

Field Trips: Charles will lead the December 17 field trip. We will meet at Dale Hollow Lake at 10 am, and around 12:00-12:20 we will leave and go to the Ledbetter Farm to collect geodes. We will check with Melba Cole to see if it's ok to stop by her property to hunt for fossils/minerals while we are in the area. Jim Butchko and Kim Hill will lead the January 21 trip to the Vulcan Quarry. We will meet at 6 am at the quarry office to get checked in and get a safety talk. We must be out of the quarry by 12:00 so they want us to start wrapping it up around 11:30.

Adult Programs: Ashley Allen will be the speaker for the November Membership Meeting. He will discuss the Union Chapel Mine and other fossils found in the area.

Junior Programs: Juniors will make gem trees in November. No Junior program in December.

Historian, Library, Web: No reports.

Newsletter: Matthew requested pictures of the DMC trip to Memphis Stone & Gravel for the newsletter.

Show : Jim advised the first Show meeting is set up for 6:30 on Monday, November 7, at the Agricenter. He will schedule future meetings for the Mondays after Board Meetings.

Old Business: None.

New Business: W. C. advised we need to pass on any information to whoever is taking over your position 2017-2018. He said we've received a request to host SandFest 2018. The Holiday Party was discussed and details worked out on food, gifts and entertainment. Jim to pick up the poinsettias (12-15), Carol will bake the turkey breasts, Bonnie will bake the hams, and W. C. will

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November Board Minutes *Continued from P. 6*

and bag the gifts.
Adjourned 7:50.

November Meeting Minutes

Mike Baldwin

Called to order 7:09. 3 visitors.

pick up
the
tablecloths

Nomination and election of 2017-18 officers. Motion that this slate of officers be accepted by acclamation carried. W.C. informed Members of the details of the December party.

Three field trips left in 2016: November 19, Richardson's Landing. December 17, Dale Hollow and Ledbetter. January 21, Parsons. Currently there are 18 people on the list. 25 is the limit. Bring a rake if you go to Ledbet-

ter. W. C. brought a display of tumbled crinoids from Dale Hollow.

Displays: Charles Hill, Nannett McDougall-Dykes, new members Leo and Jan, Kim Hill, W. C. McDaniel.

Carol introduced the club to Ashley Allen. His program: "Alabama: A Paleozoic Paradise".

Adjourned 8:30.

MAGS17 Membership Programs

W. C. McDaniel

Planning for the 2017 programs for the monthly MAGS membership meetings is forging ahead. The programs will be presented in three formats.

Speaker program Program highlights include archaeological programs covering stone tools, the Viking warship **Oseberg**, and geological presentations to include rock hunting down under (**Australia**), **small crystals, making gem trees, opals and carving jade.**

Table Top Safari New this year. The safari will be a hybrid of table top presentations that will include exhibits, displays, educational information, and how to. Some of the table tap safaris will include petrified wood, metal detecting, cleaning and prepping specimens, rock tumbling and tools of the trade/hobby.

Displays Bring a display of recent finds, hobbies, collections or things that interest you and/or Members, Names of all displayers will be entered into a grand prize drawing at the December Holiday Party.

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Celebration

Carol Lybanon

Photo credits: Mike Coulson,
Leah Gloyd, Matthew Lybanon



On December 9 MAGS Members again joined to celebrate the upcoming holiday season. We had a record turnout. As usual, we had delicious food to share, and fun and games. Thanks to all who helped plan, execute, set up, clean up, and donated bingo prizes. A special thanks to W. C. McDaniel who selected our wonderful holiday gifts and designed the "Field Trip" bingo game.



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MAGS17 Membership Programs
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Working Schedule

Month/ Date	Primary Program	Table Top Safari	Displays Members, bring those displays, enter into drawing for grand prize at the December Holiday Party
Jan 13	Ryan M. Parish, PhD "Mapping Prehistoric Tool-stone Use"	Petrified wood Formation, colors, identification	Members, bring those displays
Feb 10	Rendy Hunt "Vikings and Memphis: Recreating the Oseberg burial"	The tools of beading	Members, bring those displays
Mar. 10	David Cocke "Rock hunting Down Under"	Digging up Memphis Metal detecting and Bottle collecting	Members, bring those displays
Apr 14	MAGS, Show Committee The Earth Wide Open	Tour the show	Members, bring those displays
May 12	Make a Gem Tree Group activity	none	Members, bring those displays
June 9	Mike Howard "Collecting Tiny Crystals"	Minerals under the microscope	Members, bring those displays
July 14	Belinda Fish, Belz Museum "Carving Jade and Other Minerals"	To be announced	Members, bring those displays
Aug 11	Rock Swap	none	No displays
Sep 8	Barry Gilmore "Opals"	To be announced	Members, bring those displays
Oct 13	To be announced	To be announced	Members, bring those displays
Nov 10	To be announced	To be announced	Members, bring those displays
Dec 8	Holiday Party	none	Drawing for Display prize of the year

Ferdinand Braun, Galena, Radio, and the Modern World

Matthew Lybanon

"Everything should be made as simple as possible, but not simpler."—Albert Einstein. Keep Einstein's advice in mind as you read this article.

In 1874, German physicist Ferdinand Braun studied the characteristics of electrolytes and crystals that conduct electricity. When he probed a galena (PbS) crystal with the point of a thin metal wire, Braun noted that current flowed freely in one direction only. He had discovered the rectification effect at the point of contact between metals and certain

crystal materials. Braun demonstrated this device to an audience at Leipzig on November 14, 1876. It found no useful application at the time. But wait.

Braun is better known for his development of the cathode ray tube (CRT) oscilloscope in 1897. If you had a TV set before the LCD flat screen was developed, you can thank Braun for it (but don't blame him for the programming)—the picture tube was a CRT. More than that, Braun's discovery of the rectifying effect of certain crystals eventually led to the transistor, the basis of all modern electronics.

Before the cell phone, the personal computer, and television, there was (and still is) radio.

Braun shared the 1909 Nobel Prize in Physics with Guglielmo Marconi for his "contributions to the development of wireless telegraphy," mainly the development of tunable circuits for radio receivers. In 1899 Braun patented a "crystal detector," based on his earlier research with crystals. This device was made of a single metal wire, fondly called a "cat's whisker," touching a semiconductor crystal. The result was a "rectifying diode", which lets current through easily one way, but hinders flow the other way.

The rest of this article is about how Braun's crystal detector was used in radios—crystal radios. It's an interesting story in itself, but the preceding

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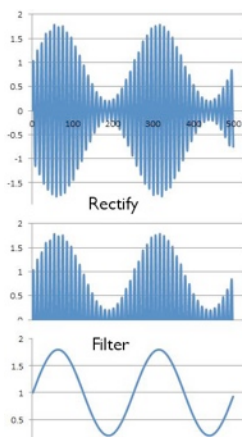
Ferdinand Braun...Modern World

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paragraphs are there to emphasize that crystal radios were just one step along the path that led to the modern world.

How does a radio signal carry sound from one place to another? A radio signal is an electromagnetic wave, not a sound wave, and its frequency is far higher than audible sound frequencies. Everybody now knows (sort of) that the radio signal gets converted into a voltage that goes through some kind of circuitry, and eventually gets passed to a speaker system that produces sound. But the genius is in the details.

At the radio station, sound somehow gets “impressed” onto a radio wave, which travels from the station’s antenna to your radio. This process is called “modulation,” and there are two types: amplitude modulation (AM) and frequency modulation (FM). In AM, the audio signal gets converted into the “envelope” of the radio wave, as shown in the top part of the figure. The radio receiver reverses the process.



In the early 1900s the most common type of radio receiver

was the *crystal set*. (You may have built one; it used to be a standard Boy Scout project.) It had four main parts: an antenna, a tuning circuit, a crystal detector, and earphones. The antenna picked up AM radio signals and converted them to varying voltages. The tuning circuit (a few simple components) selected one “carrier frequency” from all the signals coming through the air. The output was, essentially, the signal your chosen radio station sent to its transmitter (top graph). The crystal detector—Braun’s invention—“threw away” the negative half of the signal, resulting in what the middle graph shows. The high radio frequencies (RF) were still there. Sometimes there’s circuitry to smooth the signal, but the earphone diaphragm can’t oscillate as fast as the RF rate, so the earphones acted as a “low-pass filter,” yielding the bottom graph. Only four simple parts, and no power required! All the power necessary for this to operate came from the radio signal itself.



The “cat’s whisker” crystal detector (see picture) in crystal radios was actually an improved version, developed by other people, but it was based on Braun’s work. It consists of a thin wire that lightly touches a crystal of semiconducting mineral (usually

galena) to make a crude point-contact rectifier. Only certain sites on the crystal surface function as rectifying junctions. The device was very sensitive to the exact geometry and pressure of contact between wire and crystal—it was touchy and had to be adjusted frequently. But crystal radios were cheap, and were sold or made at home (cheaper) by the millions. So they were a major driving force in the introduction of radio to the public, contributing to the development of radio as an entertainment medium with the beginning of radio broadcasting around 1920.

Crystal radios were superseded by other types, but they were the first widely used type of radio receiver. And it all started when a scientist conducted research on crystals. So the next time you see a galena crystal, show some respect. And before you dismiss a basic research project as an impractical waste of money, ask yourself how many people in the 19th century could have anticipated the internet and the iPhone.

Want to build your own crystal radio? Check out www.sciencebuddies.org/science-fair-projects/project-ideas/Elec_p014/electricity-electronics/crystal-radio.

What An Adventure!

Kim Hill

What a wonderful adventure our field trip to Livingston, Tennessee, was! I made the trip with my friends and fellow Members Anne and Carla. We had originally thought to all ride together *Continued, P. 10*

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What An Adventure! in Anne's
Continued from P. 9 SUV, but
when we
thought about it we realized if I
rode with them we wouldn't have
enough room for buckets. Every
rockhound knows even if we don't
fill them all up **we need all our
buckets.**

They wanted me to use Carla's
cell phone to keep in touch. I am
cell phone illiterate and knew I'd
have a wreck trying to use it. So I
bought some walkie talkies, which
worked great for keeping in touch,
commenting on what we saw, and
when to take potty breaks.

The trip was a long one but
with the talkies, at least for me, it
wasn't too bad. When we finally
got to Livingston, Anne's GPS
sent us 30 miles in the wrong
direction to get to the hotel. It
did at least let us see where the
morning meeting site was.

In the morning we headed to
the meeting place at the Dairy
Queen. Charles and his gang had
gotten up earlier and were already
there. Another Member was also
supposed to be there. I won't
name names, but he had the direc-
tions to the first place on our list,
Dale Hollow Lake for crinoids.

Being the adventurers we are
we decided to head on out and see
what we could find. Our first stop
was in a for-pay area where we met
a wonderful gentleman who told of
us his experiences in World War 2.
The main thing I could remember
about the place we were looking
for was a road that was pretty
much one lane with one side
straight up and the other straight
down. He thought he knew the
place so we followed him to it.

When we got there we chatted a
little more with him, and gave
him big hugs, which put a big
smile on his face.

Some of us wandered on over
to the other side of the boat ramp
and some to another area, but we
didn't find anything like Charles
and I remembered finding before.
The place just didn't look right.
We remembered picnic tables.
Pat finally got some reception and
located the place we wanted.

None us were upset about not
finding the place right off. We
looked at the journey as an adven-
ture and were just enjoying the
beauty of the mountains. If we
hadn't gone to that area we would
never have seen the beautiful little
waterfalls coming out of the side
of the mountain.



Whatever it was called, when
we finally made it we hit the bon-
anza in crinoids. We each began
filling our buckets. I found some
great individual pieces and nice
small plates. I think everyone was
happy with what they found. You
could hear lots of clunks as things
were tossed into buckets, always a
good sound when hunting.

Charles called an end to that
trip. Like little kids we begged for
a little more time, but in winter
daylight runs out fast. So we—I
was gonna say “hauling” but it was
more like “drug”—our buckets

back to our cars and made ready
to hit the second place on our list,
the Ledbetter farm for geodes.

For me any drive in the
mountains is rejuvenating and it
was a beautiful ride, with pastures
full of cows and horses, an old
house, ponds. But I digress; we
made it to the Ledbetters, went
over to the house to meet them
and find out where to hunt.



We climbed up the path in the
pasture to the area he said and
started looking. At first we
weren't finding much, but kept
searching. I finally went into the
brush. Finding a dry creek bed I
began raking away the leaves and
soon started finding geodes. As I
am bad about doing, I became
engrossed in the hunt 'til Charles
called out asking if anyone was
finding any.

So engrossed was I in my hunt
I didn't notice my friends had
returned to their cars until Anne
hollered that we were leaving.
Thank goodness for Leo and his
wagon and strong back 'cause
there was no way I was getting
those buckets back down to my
truck alone.

It was another long trip, this
time mostly in the dark with
warnings of bad weather. The
weather during our hunts was
perfect for

Continued, P. 11

What An Adventure! hunting; not too cold or hot with overcast skies. But we hit rain just outside of Nashville, nothing too bad, and we soon moved out of it. We stopped about 60 miles out of Memphis and it was 72 degrees. I had ridden with my window down the whole way. About a mile down the road I called to Anne and Carla and asked if they could smell the cold in the air. Carla answered back saying the temperature had dropped to 50. A short time later it was 40 and the winds had really picked up and were knocking my little truck around. As we got closer to Memphis the rain started up again. It wasn't so bad for me but Anne and Carla live in Coldwater, Mississippi. They ran into some real bad weather, but they did make it home safely.

I can safely say the Livingston trip was a wonderful adventure, and if you haven't taken one of the out-of-town field trips you are missing a lot of fun!

Jewelry Bench Tips by Brad Smith

SANDING/POLISHING IN TIGHT PLACES

Often you'll need to sand or polish an area that's impossible to reach with even a small wheel on a flexshaft. Other times it might be the bottom of a pocket or inside bottom corner of a box that needs to be finished. One trick for these nit-picky jobs may be left over from your last Chinese dinner—a chopstick.

I've found quite a few uses for these in the shop. Prepare the tip by simply sawing it off at a 45°

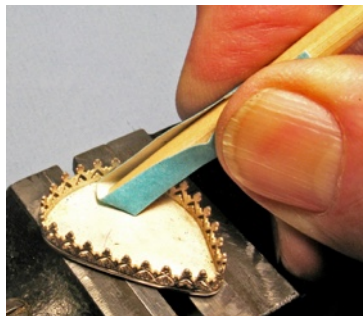
angle. Then apply whatever abrasive grit you will need for the job or hold a strip of sandpaper around the end. Loose grit can be held onto the tip with a bit of vaseline or oil. Tripoli or rouge can be just rubbed onto the end of the chopstick.



OCHRE APPLICATOR

Yellow ochre is used when you want to be sure the solder won't flow on an area of your piece while you're soldering another area. The only problem with ochre is coming up with a good way to store and apply it.

I use recycled nail polish bottles. They seal well and have a built-in brush applicator. Just clean them out with a little acetone or nail polish remover, and they're ready to go.



See all Brad's jewelry books at Amazon.com/author/bradfordsmith.

Dino History Revised

Matthew Lybanon (Editor)

It is mostly accepted that the dinosaurs were done in by the climatic after-effects of the impact of the asteroid that carved a vast crater 180km across near the Yucatan Peninsula in Mexico. Now the focus has shifted from how they died out to where they came from in the first place. In a paper just published in *Current Biology*, a team led by Max Langer at the University of São Paulo reports the excavation of four fossils that shed some intriguing light on two different aspects of that question.

The fossils (*Buriolestes schultzi*) come from the Santa Maria formation in the south of the country. One of them, at 230m years in age, is one of the oldest dinosaur fossils ever found.

Palaeontologists have long thought that dinosaurs rose to dominance early in the Jurassic period, by out-competing and rapidly replacing other land animals that emerged earlier. One such group was the lagerpetids, a group of reptiles with some dinosaurian characteristics that arose about 236m years ago, during the Triassic period. Fragmentary evidence has suggested this idea is wrong. The Brazilian discovery clearly reveals a lagerpetid living alongside a dinosaur more than 30m years before the start of the Jurassic.

Ref: *Cabreira, Sergio Furtado et al., A Unique Late Triassic Dinosaur-morph Assemblage Reveals Dinosaur Ancestral Anatomy and Diet, Current Biology, Volume 26, Issue 22, 3090-3095, DOI: <http://dx.doi.org/10.1016/j.cub.2016.09.040>*

MAGS At A Glance

January 2017

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5 Board Meeting, 6:30 pm, St. Francis Hospital	6	7
8	9	10	11	12	13 Membership Meeting, 7:00 pm, 'Mapping Prehistoric Tool-stone Use'	14
15	16	17	18	19	20	21 MAGS Field Trip, Vulcan Quarry, Parsons, TN
22	23	24	25	26	27	28 DMC Field Trip, Diamond Hill Mine, Antreville, SC
29	30	31	1	2	3	4

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