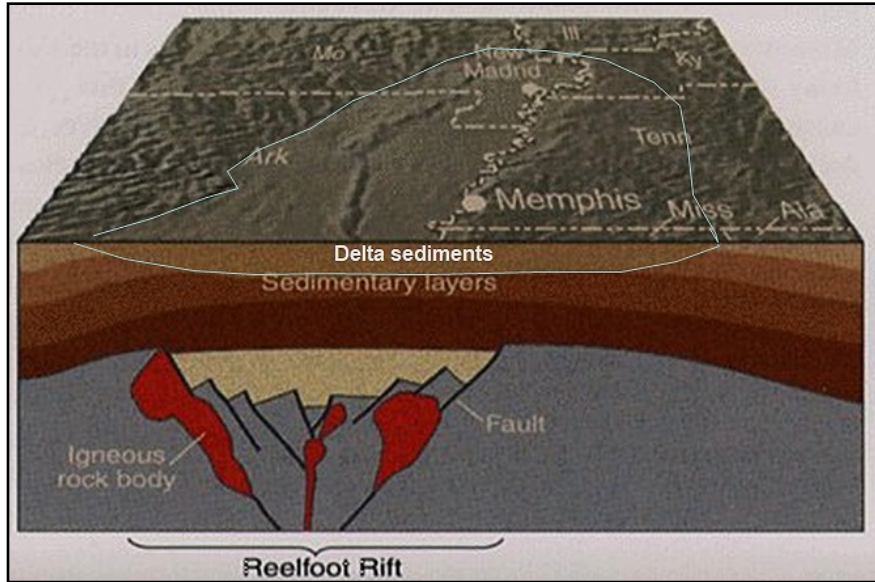




Volume 65 ◊ Number 05 ◊ May 2019 ◊ A monthly newsletter for and by the members of MAGS

May Program Dr. Randel Cox, U. Memphis

Geologic History of the Lower Mississippi River Valley



The Lower Mississippi River Valley runs from Cairo, Illinois, four hundred miles south to the Gulf of Mexico, where it merges imperceptibly with the coastal plain of Louisiana. East to west, it extends from the rocky hills of middle Tennessee to the Ozarks. From a geologist's perspective, the Lower Mississippi Valley region is

remarkable for its flatness in the interior of a continent extending far from coastal lowlands. Typically, continents are visited by repeated episodes of uplift that steepen the slope of the land, quickening the flow of rivers and streams that in their turn carve a rolling landscape of valleys and ridges such as the

Continued, P. 3

In this issue	
Geologic history of the Lower Mississippi River Valley	P. 1
The Last Ice Age	P. 1
MAGS And Federation Notes	P. 2
June 2019 Rock Swap	P. 3
Web Tip	P. 3
Finding the KT Boundary	P. 3
Southeastern Gem And Mineral Show	P. 4
MAGS Notes	P. 4
Deep Mountains	P. 6
Show Snapshot	P. 7
Fabulous Tennessee Fossils	P. 7
April Field Trip Report	P. 8
Batesville	P. 9
Fun Day At Chucalissa	P. 9
March Board Minutes	P. 9
March Meeting Minutes	P. 10
Jewelry Bench Tips	P. 11
Ancient Humans	P. 11
MAGS At A Glance	P. 12

THE LAST ICE AGE

During the youth program for May we will take a look at THE LAST ICE AGE. The Pleistocene Epoch is the time period that began approximately 2.6 million years ago and lasted until around 11,700 years ago. The most recent Ice Age occurred then, with glaciers covering much of the Earth. There have been at least five major ice ages during the 4.6 billion year history of the Earth.

MAY YOUTH PROGRAM

At the time of the Pleistocene, the continents had moved to their current positions. At one point during the Ice Age, sheets of ice covered all of Antarctica, much of Europe, North America (including all of Greenland, Canada, and parts of the northern US), parts of South America, and small areas in Asia.

We will take a look at some of the *Continued, P. 4*

MIKE BALDWIN

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

2019-2020 MAGS BOARD

President—W. C. McDaniel

(901) 274-7706 ♦ w.c.mcd@att.net

1st VP (Field Trips)—Kim Hill

(901) 388-7572 ♦ earthsis@aol.com

2nd VP (Adult Programs)—Dave Clarke

(901) 308-0334 ♦ dclarke@fieldmuseum.org

Secretary—Mike Coulson

(901) 907-9441 ♦ mike.coulson@comcast.net

Treasurer—Bonnie Cooper

(901) 444-0967 ♦ rocks4us@hotmail.com

Director (Asst. Field Trips)—Charles Hill

(901) 626-4232 ♦ hunter3006@aol.com

Director (Asst. Adult Prog.)—Matthew Lybanon

(901) 757-2144 ♦ lybanon@earthlink.net

Director (Youth Programs)—Mike Baldwin

(901) 853-3603 ♦ mbaldwin05@gmail.com

Director (Asst. Youth Prog.)—James Butchko

(901) 743-0058 ♦ butch513j@yahoo.com

Director (Librarian)—Nannett McDougal-Dykes

(901) 634-9388 ♦ redchesty@yahoo.com

Director (Asst. Librarian)—Kay MacLaughlin

(901) 465-6343 ♦ celticcatssilver@att.net

Director (Membership Services)—Bob Cooper

(901) 444-0967 ♦ rocks4us@hotmail.com

Director (Historian)—Jane Coop

(901) 685-8103 ♦ dogsandrocks3@gmail.com

Newsletter Editor—Matthew Lybanon

(901) 757-2144 ♦ lybanon@earthlink.net

Assistant Newsletter Editor—Carol Lybanon

(901) 757-2144 ♦ sgcarol@earthlink.net

Webmaster—Mike Baldwin

(901) 853-3603 ♦ mbaldwin05@gmail.com

Assistant Webmaster—Mike Coulson

(901) 907-9441 ♦ mike.coulson@comcast.net

Show Chairman—James Butchko

(901) 743-0058 ♦ butch513j@yahoo.com

Past President—Charles Hill

(901) 626-4232 ♦ hunter3006@aol.com

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.

May DMC Field Trip

WHERE: Chunky Gal Mountain, Clay County, NC

WHEN: Saturday, May 18, 10:00 A. M.

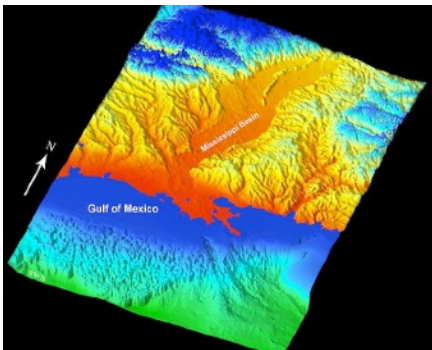
COLLECTING: Green smaragdite (some with corundum)

INFORMATION: Kim Cochran, (770) 979-8381

Links to Federation News

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

May Program
Continued from P. 1



Tennessee hills and the Ozarks. Bisecting the interior hills of North America, the flatlands of the Lower Mississippi Valley offer a stark contrast to what is expected.

Geologic investigations of the Lower Mississippi Valley have revealed that this region was once a great bay of the Gulf of Mexico, and for the last ninety million years this bay was gradually filled from north to south with delta sediments of the ancestral Mississippi River. The western shore of this bay extended from what is now Texarkana to Little Rock, Arkansas, to Cape Girardeau, Missouri. Its eastern shore ran from Montgomery to Tuscaloosa, Alabama, along the present course of the Tennessee River in Tennessee and north to Paducah, Kentucky. The delta of the Mississippi River began building southward from the north end of this great bay at what is now Cairo, Illinois, progressively filling the bay to its present coastline south of New Orleans.

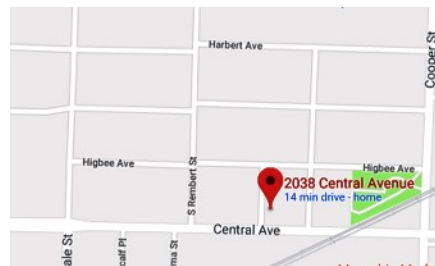
How and why this enormous bay of the Gulf of Mexico, called the "Mississippi Embayment" by geologists, formed and later filled with sediment to become the

Lower Mississippi Valley region is an interesting story involving the breakup of ancestral North America, continental drift, a volcanic hotspot, an asteroid collision with Earth, frigid ice ages, and earthquakes.

June 2019 Rock Swap

Jane Coop

Cornelia and W.C. McDaniel will host the year's first rock swap on **Saturday, June 1st at 2038 Central Avenue in Midtown** from 11:00 A. M. to 3:00 P. M.



Please **bring a tasty, picnic type food**. MAGS has the drinks and implements covered.

If you are going to sell/swap, please **bring your own table**.

Bring a small geologic treasure in a paper bag to swap with another Member. You get the same number of bags that you bring to swap. There may be other surprises!

Come join the fun!

Web Tip

MAGSters can find a useful Guide to Tennessee Fossils online. The guide credits the Tennessee Geological Survey. Just point your browser to

<http://tennesseefossils.com/index.php>

Finding the KT Boundary

Matthew Lybanon, Editor

One day 66 million years ago life on Earth almost came to an end. The oceans were empty and the land was covered with drifting ash. The forests were charred stumps. The cold gave way to extreme heat as a greenhouse effect kicked in. Life mostly consisted of mats of algae and growths of fungus: for years, the Earth was covered with little other than ferns. Furtive, ratlike mammals lived in the gloomy understory.

An asteroid had struck a shallow sea where the Yucatán peninsula is today. In that moment, the Cretaceous period ended and the Paleogene period began. Within two minutes of slamming into Earth, the asteroid, which was at least six miles (10 km) wide, had gouged a crater about 18 miles deep and lofted 25 trillion metric tons of debris into the atmosphere.

The asteroid was vaporized on impact. Its substance, mingling with vaporized Earth rock, formed a fiery plume, which reached halfway to the moon before collapsing in a pillar of incandescent dust. Computer models suggest that the atmosphere within 1,500 miles of ground zero became red hot from the debris storm, triggering gigantic forest fires. As the Earth rotated, the airborne material converged at the opposite side of the planet, where it fell and set fire to the entire Indian subcontinent.

Measurements of the layer of ash and soot that eventually coated the Earth indi-

Continued, P. 5

The Last Ice Age animals that roamed the Earth during that period, such as the woolly mammoth, saber-toothed cat, giant ground sloth and mastodon. We will also take a look at the humans that inhabited the Earth at that time.

During the May youth meeting we will vote on a name for our group. Here are two suggestions: **MAGS Miners** and **MAGS Explorers Club**. Think about these names or present your suggestion at the May meeting.

Southeastern Gem And Mineral Show

The first annual **Southeastern Gem and Mineral Show** is scheduled for August 30-September 2, 2019, in Pensacola, Florida. The show will be held at the main exhibit hall of the Pensacola Interstate Fairgrounds from 9:00 A. M. to 6:00 P. M. daily.

The organizers have planned lots of exciting exhibits including an **Ice Age Exhibit**, featuring a sabertooth cat, woolly rhino, and more, as well as a kids zone. Currently dealer space is available.

The entire show is FREE to the public with no charge for admission or parking. For more information check the website, www.segms.org, or contact Lee Baker, Director, (850) 999-9865.



Adult Programs

May: Dr. Randel Cox, "Geologic history of the Lower Mississippi River Valley"

June: Dr. Dave Lumsdem, "Petri-fied Wood From the Upland Complex"

July: Dr. Ryan Parish, "Archaeology of Poverty Point, Louisiana"

Junior Programs

May: Mike Baldwin, "The Last Ice Age"

June: Mike Baldwin, "Micro-minerals"

July: Mike Baldwin, "Caves and How They Form"

New Members

Jasmin Sloan

Debbie Greusel and Bill Behnke

Field Trips

May 4 & 5: Viburnum and Eminence, Missouri

May 18: 20 Mile Creek, Mississippi

May Birthdays

- 1 Katie Carnahan
- 2 Amber Dunn
- 4 Sunny Finch
- 9 Carol Lybanon
- 10 Julie Lybanon

- 11 Mary Elliott
- Theresa Childress
- 12 Pam Crumpton
- Trace Hartman
- 13 James Butchko
- 16 Robert Duncan
- 19 J. R. Hill
- 20 Michele Robins
- 21 Mike Nagel
- 23 Zoe Sams
- 25 Amber Shields
- 27 Kelly Bowen
- 29 Aidan Davis
- 30 Herb Nicholson
- 31 Sherry Bright

Want to Be a Member?

To become a MAGS Member, just go to our website at www.memphisgeology.org and print out an application form. There is a prorated fee schedule for new Members only. Mail the completed application along with the dues payment to the Membership Director shown on the form. If you are unable to print the application, you can pick one up at the sign-in desk at any of our Friday night Membership Meetings, or simply join at the meeting. Visitors are always welcome at our Membership Meetings but membership is required to attend our field trips.

The most important benefit of being a MAGS Member is getting to know and make friends with other members who have similar interest in rocks, minerals, fossils, and archaeology. All new Members will receive a New Member Packet, a MAGS ID card, and a monthly newsletter via email. Members are entitled to go on our monthly field trips and get free admission to our annual show.

Finding the KT Boundary
Continued from P. 3

cate that fires consumed about 70% of the world's forests. After the fires died down, Earth plunged into a period of cold. Earth's two essential food chains, in the sea and on land, collapsed. About 75% of all species went extinct. Meanwhile, giant tsunamis resulting from the impact churned across the Gulf of Mexico, tearing up coastlines, sometimes peeling up hundreds of feet of rock, pushing debris inland and then sucking it back out into deep water, leaving jumbled deposits that oilmen sometimes encounter in the course of deep-sea drilling.

When the asteroid struck, it vaporized layers of limestone, releasing into the atmosphere a trillion tons of carbon dioxide, 10 billion tons of methane, and a billion tons of carbon monoxide; all three are powerful greenhouse gases. The impact also vaporized anhydrite rock, which blasted 10 trillion tons of sulfur compounds aloft. The sulfur combined with water to form sulfuric acid, which then fell as an acid rain that may have been potent enough to strip the leaves from any surviving plants and to leach the nutrients from the soil.

Today, the layer of debris, ash, and soot deposited by the asteroid strike is preserved in the Earth's sediment as a thin stripe of black. The boundary claystone contains anomalous amounts of iridium. Where the boundary is in marine sediments, the iridium occurs in a layer just above the last Cretaceous period microfossils, and the sediments above it contain Pale-

ocene microfossils from the earliest part of the Cenozoic era. This is called the KT boundary, because it marks the dividing line between the Cretaceous period and the Tertiary period. (The Cretaceous Period is usually abbreviated K, for its German translation *Kreide*. The Tertiary has been redefined as the Paleogene, but the term "KT" persists—sometimes modified to "KPg".)

Paleontologists have long known about this extinction event, but there was no clear explanation of its cause until a young geologist named Walter Alvarez and his father, nuclear physicist Luis Alvarez, discovered that the KT layer was laced with unusually high amounts of iridium, which, they hypothesized, was from the remains of an asteroid impact. In a 1980 article in *Science*, they proposed that this impact was so large that it triggered the mass extinction, and that the KT layer was the debris from that event. Paleontologists were slow to accept this hypothesis, but over time the evidence mounted to the point that now it's generally accepted as the most plausible explanation. A 1991 paper announced the discovery of an impact crater buried under thousands of feet of sediment in the Yucatán peninsula, of exactly the right age, and of the right size and geochemistry, to have caused a worldwide cataclysm. The crater and the asteroid were named *Chicxulub*, after a small Mayan town near the epicenter.

Robert DePalma (a cousin of the film director Brian De Palma), a 37-year-old University of Kansas graduate student, has uncovered

what may be the most striking evidence of the KT event yet found. The next several paragraphs are adapted from a University of Kansas press release (Ref. 2) describing the research.



At a site called Tanis in North Dakota's Hell Creek Formation, a team of paleontologists unearthed a motherlode of exquisitely-preserved animal and fish fossils that were killed suddenly in events triggered by the Chicxulub impact. The fossils were crammed into a "rapidly emplaced high-energy onshore surge deposit" along the KT boundary that contained associated ejecta and iridium impactite associated with the impact about 66 million years ago—an impact that eradicated about 75 percent of Earth's animal and plant species.

"A tangled mass of freshwater fish, terrestrial vertebrates, trees, branches, logs, marine ammonites and other marine creatures was all packed into this layer by the inland-directed surge," said lead author Robert DePalma, a KU doctoral student in geology who works in the KU Biodiversity Institute and Natural History Museum. "Timing of the incoming ejecta spherules matched the calculated arrival times of seismic waves from the impact, suggesting that the impact

Continued, P. 6

Finding the KT Boundary could
Continued from P. 5 very well
have triggered the surge.”

DePalma, who discovered the fossil motherlode, said the find outlines how the impact could have devastated areas very far from the crater quite rapidly. “A tsunami would have taken at least 17 or more hours to reach the site from the crater, but seismic waves—and a subsequent surge—would have reached it in tens of minutes,” he said. DePalma and his colleagues describe the rushing wave that shattered the Tanis site as a “seiche.”

According to KU researchers, even before the surge arrived, Acipenseriform fish (sturgeon) found at the site already had inhaled tiny spherules ejected from the Chicxulub impact. “The fish were buried quickly, but not so quickly they didn’t have time to breathe the ejecta that was raining down to the river,” said co-author David Burnham, preparator of vertebrate paleontology at the KU Biodiversity Institute. “These fish weren’t bottom feeders, they breathed these in while swimming in the water column. We’re finding little pieces of ejecta in the gill rakers of these fish, the bony supports for the gills. We don’t know if some were killed by breathing this ejecta, too.”

The number and quality of preservation of the fossils at Tanis are such that Burnham calls it the “lagerstätte” of the KT event—paleontologist-speak for a landmark sedimentary deposit with exceptionally intact specimens. He said this is especially true as

the fish are cartilaginous, not bony, and are less prone to fossilization. Indeed, the Tanis site contains many hundreds of articulated ancient fossil fish killed by the Chicxulub impact’s aftereffects and is remarkable for the biodiversity it reveals alone.

“At least several appear to be new species, and the others are the best examples known of their kind,” DePalma said. “Before now, fewer than four were known from the Hell Creek, so the site was already magnificently significant. But we quickly recognized that the surrounding sediment was deposited by a sudden, massive rush of water, and that the surge was directed inland, away from an ancient nearby seaway. When we noticed asteroid impact debris within the sediment and a compact layer of KT boundary clay resting on top of it from the long-term fallout, we realized that this unusual site was right at the KT boundary.”

Ref:

1. DePalma, Robert A. et al "A seismically induced onshore surge deposit at the KPg boundary, North Dakota." *Proceedings of the National Academy of Sciences* (2019): 201817407. Web. 23 April. 2019. <https://doi.org/10.1073/pnas.1817407116>
2. Stunning discovery offers glimpse of minutes following ‘dinosaur-killer’ Chicxulub impact | Press release, The University of Kansas, <https://news.ku.edu/2019/03/29/stunning-discovery-of-glimpse-minutes-following-‘dinosaur-killer’-chicxulub-impact>
3. <https://www.youtube.com/watch?v=EpNMHwnxpC8#action=share>

Deep Mountains

Matthew Lybanon, Editor

In a study published in *Science*, Princeton geophysicists Jessica Irving, and Wenbo Wu, in collaboration with Sidao Ni from the Institute of Geodesy and Geophysics in China, used data from an enormous earthquake in Bolivia to find mountains and other topography on the base of the transition zone, a layer 660 km down that separates the upper and lower mantles.

Seismologists and data scientists use powerful computers to simulate the complicated behavior of scattering waves in the deep Earth. The technology depends on a fundamental property of waves: their ability to bend and bounce. Earthquake waves travel straight through homogenous rocks but reflect or refract when they encounter any boundary or roughness.

The presence of roughness on the 660-km boundary has significant implications for understanding how our planet formed and continues to function. That layer divides the mantle into its upper and lower sections. For years, geoscientists have debated just how important that boundary is. The findings provide insight into the chemical compositions of the boundary layers.

Ref: *Wenbo Wu, Sidao Ni, Jessica C. E. Irving. Inferring Earth’s discontinuous chemical layering from the 660-kilometer boundary topography, Vol. 363, Issue 6428, pp. 736-740 DOI: 10.1126/science.aarv0822. <http://science.sciencemag.org/content/363/6428/736>*

Show Snapshot



This was new at the Show this year. Congratulations to MAGS for another successful Show, and many thanks to the volunteers who helped make it a success. There will be more Show pictures next month.

Fabulous Tennessee Fossils

Dr. Michael A. Gibson,
University of Tennessee at Martin

FTF 52

Bulletin 21—*Devonian Paleontology and Stratigraphy of Tennessee Centennial*



In 2015, I introduced readers of this newsletter to the Yale paleontologist that put the Birdsong Shale fossil hunting ground “on the map”. That essay, *Fabulous Tennessee Fossils #2*, was about the tabulate coral *Favosites foerstei*, which is one of the corals named in 1920 by Carl Owen Dunbar as part of his dissertation under his mentor, Yale paleontologist, Charles Schuchert. For the next several essays, I thought I would focus on the many fossils Dunbar described and named from his work in West Tennessee; fossils which many of you whom visit the Vulcan Materials quarry in Parsons (and surrounding Lower Devonian outcrops) may have in your collections. In his dissertation, Dunbar refers to the West Tennessee Devonian as the “happy hunting ground” for fossils due to the diversity of middle Paleozoic fossils

that easily eroded out of the shales or are embedded in the limestone of the region (Dunbar, 1919, p. 55). While Dunbar was not the first to recognize the fossils in the region (that distinction belongs to Tennessee’s first state geologist, Gerard Troost, in his 1839 *5th Geological Report on the Geology of Tennessee* presented to the Tennessee legislature), Dunbar was the first to systematically describe both the stratigraphy and paleontology in detailed outcrop exposures. Additionally, he revised the stratigraphy significantly over the earlier works, including naming the Linden Formation. I refer you to FTF #2 to brush-up on C. O. Dunbar before moving forward with this essay, in which, I will concentrate on his Tennessee bulletin itself and the fossils he described as part of his work.

Bulletin 21 was the result of

Dunbar’s mapping of West Tennessee during the summers of 1914 through 1917, the later field study date being made possible by funding from Dr. A. H. Purdue of the Tennessee State Geological Survey, who unfortunately passed away before the 1919 publication date of Bulletin 21. During the work, Dunbar interacted with several of the leading American paleontologists of the early 20th century, including Dr. Ray Bassler (U. S. National Museum), who helped identify the bryozoan fossils, Dr. Frank Springer (U. S. National Museum), who worked with Dunbar on the crinoids, and Dr. Bruce Wade, who had mapped much of Hardin County and would soon become famous himself or his monograph on the Cretaceous Coon Creek Formation.

The organization of Bulletin 21 is *Continued, P. 8*

Fabulous Tennessee Fossils useful to
Continued from P. 7 note as it
demonstrates the broad approach that many early geological studies took and the nature of the background information available at that time. Chapter I of the bulletin sets the overall setting by explaining the exposure area of Devonian outcrops in West Tennessee, followed by the cultural and physiographic features of the area. Why would cultural features be important to a fossil study? Remember the date of the study – middle nineteenthens. Good roads were nearly nonexistent in this region then, there were few state parks nearby for lodging, and railroads were a necessity for transportation. Also, a good geologist needs to know the physiography (lay of the land) and climate to understand the geologic processes working on exposing and destroying the rocks and fossils. Other short summaries included the geologic structures, which affect outcrop distribution, stratigraphy (Dunbar only provides a brief paragraph at this point as the rest of Bulletin 21 will focus on a very detailed examination of the stratigraphy), and finally economic resources exploited from these rocks. That later is of course what most readers would want to know about the local geology. To round out the introductory portion of the Bulletin 21, Dunbar provides a brief (couple of pages) summary of overall geologic history of the region followed by a very useful summary of the history of geologic study in this area (referring all the way back to Troost's 1839 report mentioned above and ending with Bruce Wade's 1914

study of the geology of nearby Perry County).

Next comes the meat of the bulletin—Chapter 2 on stratigraphy and correlation of geologic formations and their contained fossils. Dunbar outlined the geographic distribution and lithologic character of all Devonian formations in West Tennessee (nine in all), but included the underlying Silurian-aged Decatur Limestone as a starting point. Also in this chapter are summary charts for the stratigraphic occurrence of all of the fossil taxa known from each of these formations—a biostratigraphic summary—along with four photographic plates of fossils for identification of the more commonly encountered fossils from several of the formations (but not all of them). These charts are necessary for establishing the geologic time for the formations by using index and guide fossils. In spite of the paleontological wealth in Bulletin 21, there are no actual taxonomy systematics in the bulletin for the fossils, which limits the bulletin's utility as an identification guide. Most of the taxonomy was published separately the next year as *New Species of Devonian Fossils from Western Tennessee* (Transactions of the Connecticut Academy of Arts and Sciences, 22:109-158). Also frustrating for the amateur collector, this later publication only focused taxonomic systematics on the new species erected by Dunbar (but which he listed in his charts in Bulletin 21). For the more common fossils not pictured in either publication, one must rely on the James Hall's great monographs published in New York for identification. Later

work in the 1940's–1990's on the Devonian of Oklahoma provided more references for taxonomic identification by comparison to these two areas east and west of the West Tennessee material. Dunbar erected 41 new species in his *Transactions* publication, which he figured some of in Bulletin 21. Over the next few installments of this essay series, I will focus on several of these taxa individually.

Dunbar ended Bulletin 21 with a chapter (Chapter III) devoted to describing the actual outcrops he used in his stratigraphic and paleontology studies of this region. Most of the sites still exist and several of them have become favorites for collectors, professionals, and university classes in the ensuing 100 years since publication of Bulletin 21. Some are now gone. Perhaps you visited a couple of these now classic sites in West Tennessee's "happy hunting ground" for fossicking? Could you feel the ghost of Dunbar looking over your shoulder?

April Field Trip Report

Kim Hill

With it being the first nice weekend in awhile and being Easter weekend, only a few of us showed up at Blue Springs. It was a beautiful day for collecting—clear blue skies, light jacket weather, great for hunting for treasures of the earth

Seems like every time I go to Blue Springs it's after a lot of rain. I took four grandkids once. While I hunted they found mud puddles. Had to stop at Lake Chewalla on the way back so they could swim off *Continued, P. 9*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

April Field Trip Report the mud .
Continued from P. 8 This time

there was some mud to deal with and it does make it hard to really see what you are looking for.

My method is throwing lots of mud covered objects in a bucket and cleaning it at home to find the treasures inside. This trip things were different. I still dug around in the washes with success, but I guess because of all the rain we have had lots of material was washed out and we found crabs lying on the surface.

I am still cleaning mine but I already have 10-15 small crabs, crab pieces, some shells I find interesting, and coprolite. I think Blue Springs teaches patience. You really have to work to find its treasures especially after you get home cleaning all that dang clinging thick mud.



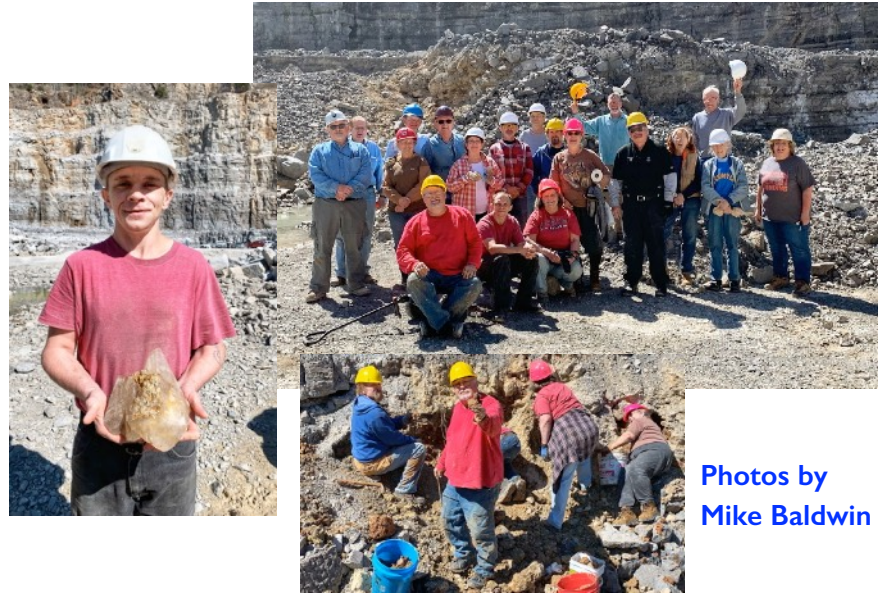
Remember May 4-5 is the Missouri trip, collecting druzy and calcite. Contact me if you want to join us and need info. May 18th we will be journeying to 20 Mile Creek for sharks teeth and other fossils. Even Indian projectile points can be found. There will be a signup sheet and more information at May's meeting

Kim Hill

Get up. Get out. Hunt rocks.

Batesville

Here are a few more pictures from the March field trip.



Photos by
Mike Baldwin

Fun Day At Chucalissa

Mike Baldwin

Mission accomplished. I set up a MAGS table at Fun Day on April 20. Approximately 120-130 people came to the event. That translates to about 25-30 families. I think I spoke to all of them and passed out 25-30 Show postcards and MAGS information sheets. On the back of the info sheets, I printed a copy of the 2001 MAGS Rockhound News article about MAGS involvement in the beginning of Chucalissa and the archaeological work done at the site by early MAGS Members (1950s and '60s). Our table displayed a few items from my Native American collection, including 5 drums and a pair of Oglala Lakota Pow Wow Moccasins. I saw three other MAGS Members at Fun Day [Park and Terri Noyes, and Ron Brister, who emceed the event]. Here are a few photos from Fun Day.



March Board Minutes

Mike Coulson

Called to order 6:34. Present: W. C. McDaniel, Mike Baldwin, Kim Hill, Matthew Lybanon, Carol Lybanon, Bonnie Cooper, Bob Cooper, Jim Butchko, Mike Coulson, Dave Clarke.

Secretary: Minutes distributed, reviewed and approved.

Treasurer: Our

Continued, P. 10

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

March Board Minutes check for our *Continued from P. 9* SFMS liability and show insurance has been sent in and we have already gotten confirmation it was received. The "Request for Certificate" form the Agricenter requires for the show has also been sent in. The club's 2018 taxes (e-file) has been filed and was accepted. W. C. received a copy of everything at the Board Meeting. Update on the non-profit reduced postage: still a work in progress.

Membership: Two new family memberships since the last Board Meeting. The new 2019 MAGS Membership Directory was emailed to the whole club, and the most recent updated membership list was emailed to Board Members.

Field Trips: March 16 trip to Batesville Limestone Quarry looking for calcite and fluorite; Blue Springs in April (subject to change). The May trip is planned for 20 Mile Creek (fossils and shark's teeth). Missouri April or May.

Adult Programs: Michael Gibson in May had to shift to November. Mike Howard is giving March program on Crater of Diamonds State Park. Ron Brister is experiencing some health issues and reluctant to deliver our April program.

Junior Programs: Theme for February meeting was mountain building. Brazilian granite was given out to all present. April they will be with the adults as we prepare for the Rock Show. Mike will take the lead on getting a display table for the youth at the show possibly showing some examples of their work from membership meetings and possibly photos of youth on field trips. It would be good to encourage the kids to get involved at the table. Rest of monthly programs: The Last Ice Age [May], Micro-Minerals [June], How Caves Form [July], Indoor Picnic [August], Native American Lore and Artifacts with

Kim Hill [September], Everyday Geology with W. C. McDaniel [October], Who Are the Native Americans and Where Did They Come From? [November] Holiday Party [December].

Library: No report.

Show: Next meeting April 1. Everything pretty well set up, catering set up, demonstrators confirmed, dealers paid up. Will schedule grab bag packing. Will order wrist bands. Show setup will be Friday April 26, Show April 27-28.

Rock Swaps: Still thinking about having the first rock swap at Jane Coop's house. Carol has concerns based on the value of some of Jane's collection.

Editor: Newsletter should go out tonight (2/28).

Web: January updates done. After Show start thinking about redesigning site.

Old Business: Clyde Chrisman, Life Member, passed away on Feb 1.

New Business:

1. Board Members

- Assistant Editor needed. Club needs to formalize the idea of an assistant editor. Do the Bylaws need to be changed?
- Appointed Carol as Assistant Editor and Mike Coulson as Assistant Webmaster.
- W. C. went over to College of Art. Bill Price, metal smith instructor on staff, offered to teach classes to our Members for lab fees only. 10-12 people at a time.
- W. C. ordered plastic bags and would like to put club logo, 3-color 4"x2" sticker, on bags.
- Mike Baldwin could provide printable business cards, 3-color, for each Board Member.
- Mike Baldwin will get pricing and sample colors on t-shirts with new color options. Two colors suggested were hunter green (or olive

drab) and black.

2. Outreach

- Mike Baldwin will be representing MAGS at Schilling YMCA, youth program March 15, for after school kids, 3-6 and 7-10 year olds. Will be rock based and will take Show post cards to hand out.
- Mike will also give a talk at Collierville Middle School, 5th grade class, and will deliver 300 postcards to science teacher.

Adjourned 7:38.

March Meeting Minutes

Mike Coulson

Called to order at 7:08 by Dave Clarke.

Membership: 6 new visitors tonight.

Field Trips: March 16, Batesville, collecting calcite, fluorite, and other rocks and fossils. Need hard hat, safety glasses, boots, pry bar. April, we will go to Chucalissa.

Show: Dinner, Friday night at 6 pm. Please bring side dish for desert and case of bottled water or 12 pack of soda. Also bring snacks for vendors. Sign up to help out with Show on SignUp Genius.

Displays:

1. Leo and Jan: agates, prizes bagged up, 901 rocks to donate to Show.
2. Kim Hill: Finds from Sugar Creek, Lake Superior agates from Richardsons Landing, various purchased items.
3. Aiden Davis: Volcano model and rock collection.

Program: Mike Howard presented on Crater of Diamonds State Park in Arkansas.

Adjourned 8:20.



Jewelry Bench Tips by
Brad Smith

SANDING DISKS

One of my favorite flexshaft tools that saves a lot of time is the snap-on sanding disk. I mainly use the medium and fine grits but sometimes like the very fine ones sold for working with platinum.

Ordinarily, you'd think of placing the disk on the mandrel with the grit side facing away from your hand, but notice that you end up with your elbow up in the air. Instead, try flipping the disk so that the grit side is towards your hand. It's a much more comfortable position because the elbow is down near your side, and it lets me hold the work up close where I have a better view of what I'm sanding.

I use these snap-on disks so frequently that I keep multiple mandrels with different grits already mounted in the bur stand. Some mandrels have the grit facing out and some facing in.



EASIER PRONG SETTING

When setting stones in a prong mount, the tool is less likely to slip off the prong if you grind a groove into its face or rough up the face a bit with sandpaper. Some folks prefer a prong pusher for doing this, and others like a set of pliers.

The easiest way to create a slot on the pusher is with a file, and the easiest way to create a slot on one jaw of your pliers is with a cutoff wheel. Then do a rough polish on the slot with a medium grit, knife-edge silicone wheel.

Solve Problems & Be More Productive With Brad's "How To" Books

amazon.com/author/bradfordsmith

Ancient Humans

Matthew Lybanon, Editor

The earliest dispersal of humans into North America is a contentious subject, and proposed early sites are required to meet the following criteria for acceptance: (1) archaeological evidence is found in a clearly defined and undisturbed geologic context; (2) age is determined by reliable radiometric dating; (3) multiple lines of evidence from interdisciplinary studies provide consistent results; and (4) unquestionable artifacts are found in primary context.

The earliest widely accepted evidence of people in the Americas is less than 15,000 years old. Genetic studies strongly support the idea that those people were the ancestors of living Native Americans, arriving in North America from Asia. If humans actually were in North America

over 100,000 years earlier, they may not be related to any living group of people. Modern humans probably did not expand out of Africa until 50,000 to 80,000 years ago, recent genetic studies have shown.

Prehistoric humans—perhaps Neanderthals or another lost species—occupied what is now California some 130,000 years ago, a team of scientists reported. The bold and fiercely disputed claim, published in the journal *Nature*, is based on a study of mastodon bones discovered near San Diego. If the scientists are right, they would significantly alter our understanding of how humans spread around the planet.


The bones were found in 1992 when construction workers dug them up while clearing earth to build a sound barrier along Route 54 in San Diego County. Paleontologists from the San Diego Natural History Museum spent the next five months excavating the layer of sediment in which they were found.

The thick bones were broken and smashed, and near the animal were five large rounded stones which contained scratch marks. Small chips at the site fit neatly into the rocks, suggesting that they had broken off while people used them as hammers, possibly to get marrow out of the bones. Similar marks appear on rocks used to smash elephant bones.

Ref: Holen, Steven R., et al., A 130,000-year-old archaeological site in southern California, USA, *Nature* volume 544, pages 479–483 (27 April 2017), <https://doi.org/10.1038/nature22065>

MAGS At A Glance

May 2019

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	1	2	3	4
				Board Meeting, 6:30 pm, St. Francis Hospital		MAGS Field Trip, Viburnum, MO
5	6	7	8	9	10	11
MAGS Field Trip, Eminence, MO					Membership Meeting, 7:00 pm, "Geologic History of the Lower Mississippi River Valley"	
12	13	14	15	16	17	18
						MAGS Field Trip, 20 Mile Creek/DMC Field Trip, Chunky Gal Mountain, NC
19	20	21	22	23	24	25
26	27	28	29	30	31	1
						June Rock Swap, McDaniel residence, 11:00-3:00

Memphis Archaeological and Geological Society
 2019 Littlemore Drive
 Memphis, TN 38016

