

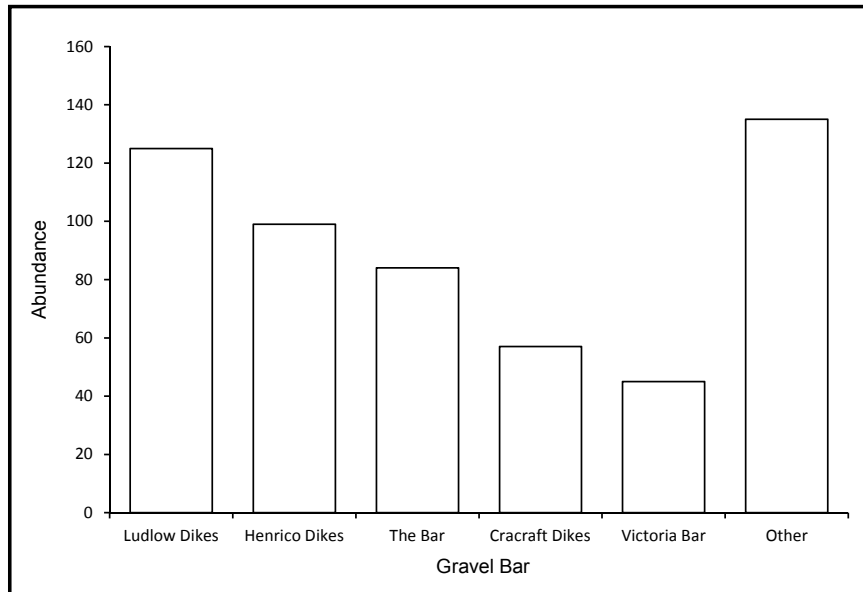


Volume 64 ♦ Number 09 ♦ September 2018 ♦ A monthly newsletter for and by the members of MAGS

The Looper Collection

Dr. Nina L. Baghai-Riding

September Program



The abundance of skeletal elements from designated gravel bars associated with the Looper Collection

“The late Pleistocene of North America is characterized by vertebrate animals (mostly mammals weighing ≥ 44 kg) including American mastodon, bison, giant ground sloth, and giant short-faced bear. Disarticulated skeletal elements of vertebrate fauna are ex-

posed frequently on floodplain and gravel bar deposits after floodwaters retreat throughout the Mississippi Alluvial Plain. One unpublished vertebrate compilation, known as the Looper Collection, is stored at Delta State University. *Continued, P. 3*

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SUMMER INDOOR PICNIC AND ROCK SWAP

Thanks to everyone who helped make our August Indoor Rock Swap a great success. To mention a few: Bob and Bonnie Cooper, who set up all the tables; Lou White, who ran a wonderful and profitable live auction; and our Members for bringing all the delicious food. The winner of the Hawaiian shirt contest was W. C. McDaniel. Really *lolo* (crazy



shirt. *Mahalo* to all the contestants.

If you missed the August Rock swap look for information about our October outdoor picnic and rock swap. We will again get together at the Freeman Smith Park in Bartlett. Our plans are for a Sunday outing with fun for everyone. Plan to attend.

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MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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.

September DMC Field Trip

WHERE: Willis Mountain Kyanite Mine, Dillwyn, VA

WHEN: Saturday, September 29, 9:00 A. M.-1:00 P. M.

COLLECTING: White kyanite blades, pyrite, quartz, more

INFORMATION: David Ball, (434) 983-9595 (home), (703) 256-0097 (cell), or gmslveditor@gmail.com (email)

Links to Federation News

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

The Looper Collection This collection consists of 546 vertebrate cranial and post-cranial elements from Mississippi River gravel bars that spanned 210.5 river km (130.8 miles) and 19 counties within three states (Arkansas, Mississippi, and Louisiana) from Coahoma County Mississippi, in the north to East Carroll Parish, Louisiana, in the south. Mammals assigned to seven different orders are represented, as well as bone fragments of Aves, fin spines of catfish and small mouth buffalo fish, and Teleostei, and shell fragments of turtles and tortoises. This collection is significant because it contains remains of several species that have not been previously published from Mississippi: dire wolf, Columbian mammoth, and large-headed llama. Other species including American manatee, giant beaver, large tapir, Vero tapir, and American black bears contained in this collection represent rare Late Pleistocene occurrences within the southeastern United States. The abundance of assorted megafauna may be the result of the Mississippi Alluvial Plain serving as a migratory route and offering a variety of habitats.”

The Looper vertebrate assemblage was collected over a six-year span (1989-1995). Overall the color of the species varies from dark to yellowish brown, reddish-brown, or brownish black, but some are gray, tan, or white. Many skeletal remains are permineralized and darkened with hematite. Blackened regions occur on some bones. Specimens include skulls, isolated teeth, horn corers, antlers, scapulae, vertebrae, humeri, ulnae,

sacra, femurs, neural arches, ribs, and more. Cranial elements represent 35% of the assemblage, whereas post-cranial elements comprise 65% of the assemblage.

The Looper Collection contains 12 orders, 21 families, 23 genera, and 26 species. Herbivorous skeletal elements are dominant (98.5%), whereas carnivorous skeletal elements are rare (1.5%). Differences in dietary requirement are noted. There were browsers, grazers, animals that lived near water, herding animals, omnivores, and more. Of the mammalian elements categorized to genus *hindgut* represented 57.9% of the taxa (horse, mastodon, mammoth, beaver, manatee, and ground sloth). Foregut animals represented 39.25% (bison musk ox, deer moose, and large-headed llama). No gut represents 1.54% (bear). Several species possess wide geographic distribution throughout North America. For example, the giant beaver, the largest rodent in North America, are associated with sites in Indiana, Illinois, Florida, eastern Tennessee, and Texas. The Columbian mammoth is well-known from sites ranging from Alaska south to Nicaragua and eastward into Florida and throughout the Midwest. Many specimens in the Looper Collection also may be representative of spring seasons. For example, there are 36 shed antlers of white-tailed deer. Male deer shed antlers in the spring.

Besides, the Looper Collection there are few published written accounts of late Pleistocene vertebrate fossils from the Central Mississippi Alluvial Valley. Rud-

dell (1999), assisted by Manning, completed a doctorate dissertation on the late Pleistocene vertebrate Connaway Collection that was obtained from Mississippi River gravel bars that spanned from southwestern Tennessee, southeastern Arkansas, and northwestern Mississippi. The Connaway Collection, housed in the Pink Palace Museum in Memphis, Tennessee (Dockery and Thompson, 2016), contains 2,288 skeletal elements of 27 mammalian species. The Connaway Collection possesses 17 taxa that are associated with the Looper Collection. However, the Connaway Collection contains additional species of late Pleistocene taxa of fish, reptiles, birds, and mammals.

There is no modern equivalent to late Pleistocene mammalian communities. It is also difficult to determine the absolute abundance and diversity of late Pleistocene species that existed in the Lower Central Mississippi Valley. It also remains puzzling how the megafauna represented by the Looper Collection disappeared. Climate instability was occurring in North America from 20 ka–10 ka including in the Central Mississippi Alluvial Valley. Rising levels of greenhouse gases and increased solar radiation caused ice sheets to melt starting approximately 16.5 ka (Meltzer, 2015) and vegetation shifts occurred when temperatures rose. The Mississippi River changed from a braided to a meandering regime circa 10 ka. Geomorphic changes probably caused cold-temperate species to migrate away from this region.

See figures on P. 4.



Location map depicting the 19 gravel/sand bar sites associated with the Looper Collection:

Collection: 1. Wilson Point Dikes, East Carroll Parish, Louisiana; 2. Corregidor Dike, Issaquena Co., Mississippi; 3. Cracraft Dikes, Chicot County, Arkansas; 4. Leota Bar, Washington County, Mississippi; 5. Leland Neck, Washington County, Mississippi; 6. Luna Chute, Chicot County, Arkansas; 7. Choctaw Bar, Desha County, Arkansas; 8. The Bar, Desha County, Arkansas; 9. Prentiss Bar, Bolivar County, Mississippi; 10. Terrene Bar, Bolivar County, Mississippi; 11. Victoria Bar, Desha County, Arkansas; 12. South White Rive Chute, Desha County, Arkansas; 13. North White River Chute, Desha County, Arkansas; 14. Henrico Dikes, Desha County, Arkansas; 15. Ludlow Dikes, Phillips County, Arkansas; 16. Island 64, Phillips County, Arkansas; 17. Island 62, Phillips County, Arkansas; 18. Miller Point, Phillips County, Arkansas; 19. Rosedale Gravel Co.; Bolivar County, Mississippi.



Late Pleistocene animals associated with the Looper Collection.

- A. fossil horse: lower molars.
- B. giant ground sloth: claw core fragments 1. distal phalanx, pes digit 3 without claw from Chicot, Arkansas; 2. Distal phalanx, pes digit 3 with complete basal flange from Bolivar Co., Mississippi, 3. Distal phalanx, pes digit 3 with complete basal flange from Desha Co., Arkansas.
- C. (1–3) giant beaver: 1. Left side of mandible fragment with two molars, 2. right mandibular ramus with incisor and four molars, 3. proximal left femur fragment; (4–6) *Castorides ohioensis*: 4. left lower molar, 5. right lower incisor fragment (tip incomplete), 6. partial incisor (enamel side).
- D. American manatee: right radius-ulna.
- E. large tapir: 1. molar, 2. two metapodial bones, 3. edentulous symphysis, 4. left mandibular ramus fragment with two molar roots.
- F. American mastodon: 1. juvenile deciduous premolar (worn), 2. adult upper molar (worn).
- G. American mastodon: enamel side of a small tusk fragment.
- H. Columbian mammoth: cheek tooth fragment with thin enamel plates.

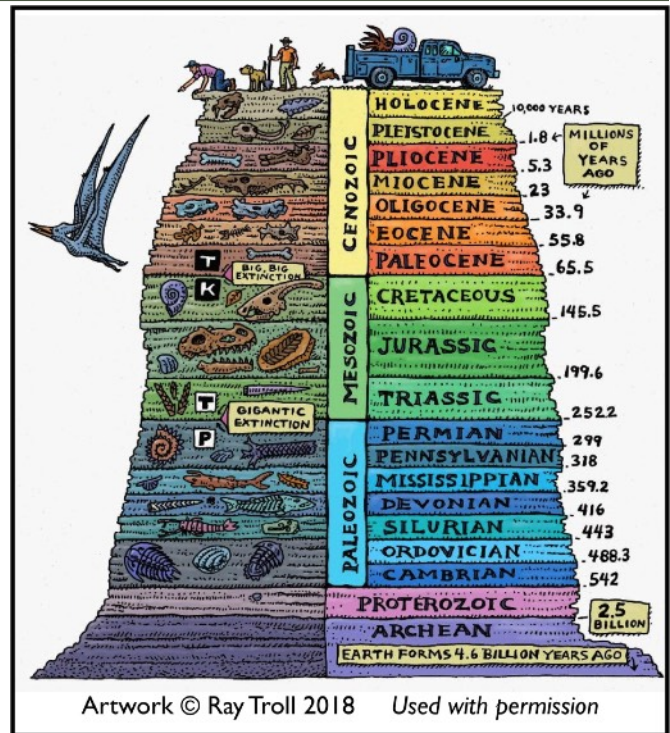
Eons, Eras, Periods, And All That

Some of us (me included) are a little hazy on geologic time. We saw *Jurassic Park*, but we couldn't tell you when the Jurassic Period (or is it an era?) was without looking it up. The figure to the right, which will show up again in later issues, may help.

Geologists have divided Earth's history into a series of time intervals, not all of the same length. Eons are the largest intervals of geologic time and are hundreds of millions of years in duration. Eons are divided into smaller time intervals known as eras. Most of this geologic time mountain image is the Phanerozoic eon, divided into three eras: Cenozoic, Mesozoic, and Paleozoic. Only the two bottom layers are from an earlier eon (Precambrian).

Moving on, eras are subdivided into periods (and we won't even talk about epochs). We live in the Holocene period, but most of the rocks and fossils we collect come from earlier periods.

Look for more in later issues.



From Memphis to Spruce Pine to Franklin and Back

George Loud, MAGS Life Member

My wife and I had planned to attend gem and mineral shows in Spruce Pine, North Carolina, at the beginning of August but, unfortunately, had to cancel out at the last minute because of a health problem. However, mere mention of "Spruce Pine" brings to mind a story which starts in Franklin, New Jersey.

Many years ago, in the process of going through offerings of outdoor vendors at the "Pond" in Franklin, New Jersey, I came across some strange looking pyrite. The locality given for this strange "titaniferous pyrite" was Magnet Cove, Arkansas. I had collected in Magnet Cove many times, starting when I was a kid,

but had never seen such material before. Because I regarded it as unusual for the locality and because it was priced cheap, I purchased a piece. My inquiries of the vendor revealed only that he had purchased the material from a vendor at a show in Spruce Pine, North Carolina.

Fast forward about one year to Memphis, Tennessee, and one of my periodic trips there to visit my mother. As usual on such trips I also visited my good friend Dr. Jim Cole who also lived in Memphis. Dr. Cole was one of the most enthusiastic "rockhounds" I have ever met. I collected with him in Magnet Cove on several occasions. He owned a cabin near Mount Ida, Arkansas, and we used it as our base of operations. His home in Memphis had a very large basement full of minerals. Likewise, his large back yard was full of crates and buckets of self-collect-

ed minerals. During this particular visit I noticed a container full of pyrite that looked very similar to my specimen of "titaniferous pyrite."

Question: "Jim, what is this stuff?" Answer: "Oh, we found that if we soak in bleach pyrite from Cove Creek it turns to that color. I call it 'titaniferous pyrite' but that is just a guess on my part." Knowing that Dr. Jim was a frequent vendor at the Spruce Pine shows, those comments put it all together for me.

I collect mainly minerals from classic U. S. localities and tend to jump at anything I see for sale that appears to be unusual for such a locality. Lesson learned and frequently forgotten: if it appears to be unusual for the attributed location, (1) the label may be wrong or (2) the specimen may be faked in some manner. To

Continued, P. 6

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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From Memphis ... and Back illustrate the point, at the Tucson Show I once purchased an apophyllite specimen labelled "Centreville, Virginia" because it seemed to be an unusual habit of apophyllite for the locality. Upon returning home and unwrapping the specimen, I turned it over and, upon seeing the matrix, I knew immediately that it was from India. I should have turned it over to better see the matrix before I purchased it. Hate to admit that I was so stupid.



Field Trips

September 22—We will go to Hedger's Mine in Jonesboro, Arkansas. Meet time is 10:00.

October 20—We will go somewhere in or closer to Memphis. Possibilities are: Richardson's Landing, Sugar Creek, or Nonconnah Creek depending on the water levels. Meet time is 10:00.

November 17—We will go to a quarry in Batesville, Arkansas. Meet time is 9:30.

Adult Programs

September 14—Dr. Nina Bahai-Riding, "Lonnie Looper Fossil Collection"

October 12—David Clarke,

"Amber"
November 9—MAGS School of Rock plus Auction(s)

Hospitality

Thanks to all who signed up to work hospitality at the Membership Meetings. You make that part of the meeting work better.

The duties are simple:

1. Before Meeting: Arrive around 6:30. Help set up and organize tables. All items are located in a rolling cabinet.
2. Monitor snacks, drinks, ice.
3. After Meeting: Clean up, put all items back in cabinet.
4. Two Members per meeting.

Here is the schedule for the next three months:

September 14—Open. Call Mildred Schiff, (901) 683-8446, to volunteer

October 12—**Kathy Baker** and **Jane Brandon**

November 9—**Dee Dee Goossens** and **Arlene Oleartchick**

September Birthdays

- | | |
|----|--|
| 1 | Wayne Pinner |
| 2 | Eric Marbury |
| 5 | Dianne Weathers
Leo Koulogianes
Emily Fox-Hill
Richard Hill |
| 7 | Connor Smith |
| 10 | Clara Miller
Alishia Parks |
| 11 | Belinda Loyd |
| 13 | Larry Dunn |
| 14 | Jane Coop
Lisa Goossens |
| 15 | David Bruce |
| 16 | Michael Montgomery |

19 Shirley Hawkins
Karen Schaeffer

22 Karen Doherty
Dominik Suarez

23 Park Noyes
Mildred Schiff
Dr. Earl Reyer

25 Ben Williams

26 Raymond Carnahan
Lucia Clarke

28 Bonnie Cooper

29 Gunnar Wallace

New Members

Christopher Johnson

Benjamin and Jessica Gaillard and children Cole and Jace

Heidi and Michael Browning and children Juliette and Jack

Wildacres Workshop

September 17-23, 2018

<http://sfmsworkshops.com/>

Tuition \$395

Full descriptions of class and instructors on website



Chains

Beginning Chain-Maillé Jewelry—Roy Deere

This class is an introduction to one of the popular and fastest growing areas of jewelry making. Students will learn the proper way to open/close jump rings, basic patterns of linking the rings to form intricate chains, and finishing techniques to make the chains into wearable jewelry. The class will consist of a couple of pre-selected projects to teach the basic techniques followed by other projects which each student can indi- *Continued, P. 7*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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Wildacres Workshop vidualy select.
Continued from P. 6 Class Fee: \$50
to \$150

Intermediate Chain-Maillé Jewelry—Roy Deere

The class will introduce the student to such advanced techniques as non-round jump ring shapes, jump rings made from different wire shapes, beaded enhancements, mixed metals, dangles, drapes, and many other enhancement techniques that can be applied to traditional designs to make them very unique. We will also examine some more complicated patterns and learn approaches to doing them which make the process much easier. Class Fee: \$75 to \$250

Fused Chain-Maille Jewelry—Roy Deere

In the Fused Chain-Maille class we will explore the construction of necklaces, bracelets, and earrings which have all of their ends “soldered” together. Work will be done with Argentium wire. Argentium is a special class of Sterling Silver that has Germanium added to replace a small amount of the Copper in the Sterling. This changes some of the properties of the silver. Specifically it allows the silver to be fused. Class Fee: \$100 to \$300

Cold Connections I—Morning Sherrod

This class will start with basic skills such as the proper use of a jewelers saw, hammering, patterns, doming with dapping blocks using a die cutter, and how to anneal metal. We will be using copper, brass, bronze, and silver to add color and character to your jewelry. Connections will be accom-

plished using rivets, jump rings, and wire. We will also learn about patinas and etching. This will be a fun class with many finished pieces to take home. It will also provide a framework for more advanced projects. Class Fee: \$80

Electro-Etching—Micah Kirby

Learn a design driven approach to Electro Etching. Gain knowledge using multiple masking techniques including oil based marker, vinyl, P-n-P, and photosensitive paper as resists on metal. Acquire experience with two, non caustic and non gas producing electrolyte solutions: salt and cupric nitrate. Low voltage power supplies will be our power source to initiate etching. Copper and silver will be the main metals we use for this course (others can be used). Lab fee: \$150

Enameling—Ruth Prince

Enamels are basically finely ground glass that bonds with metal when heat is applied. This week we will explore not only traditional kiln firing but also free-wheeling torch firing. During the week, we will try traditional techniques like basse-taille and cloisonné and also spend some time playing with fire and smoke as we raku fired enamels. We will try out liquid and acrylic enamels, apply decals, draw on enamel with a pencil, and learn what things can be added as inclusions in the enamel. We will be applying enamel to copper. Lab Fee: \$75

INTRO TO INLAY—Chuck Bruce

Beginning Inlay Jewelry—Students will construct an inlay pendant (project 1), and student choice after. Suggestions for project, Large

Inlay pendant, inlay bead, Inlay Ring, Belt Buckle, and Cuff links. Students can bring basic silver tools, pocketknife or scribe, will have most tools needed. Students need to bring or purchase 2-3 slabs of rock that are similar hardness, Woods, Fossil Ivory and can be combined for inlay. Pattern stones do very well with plain colored stone. Expect waste rock. Lab Fee: \$150.00 Estimate Material Cost: \$100 to \$300

Seed Bead Weaving—Ann Page

The offered class will be A Study in Right Angle Weave and will include a bracelet, a pendant, and a bezel for any shape stone cabachon. It will also include making two ropes, one in flat right angle weave and one in cubic right angle weave. The kit price for this class is \$45. This will include access to Ann’s treasure chest of beads. All projects will include gemstones. There is a limit of 8 for this class. Class Fee: \$45

Silver I—Pattie Appleby

NO previous experience required! You will learn basic techniques of jewelry fabrication and metal-smithing by making pieces such as rings, bracelets, and pendants. Students will learn soldering with a torch, piercing, forming, finishing and stone setting. A materials fee of \$65 is payable at the beginning of the class and silver and/or copper may be purchased from Pattie for each project at a total cost of from \$50-\$150 (according to how many pieces you may make!).

FEE: lab fee is \$65 and the class projects fee will be approximately \$50-150

Fabulous Tennessee Fossils

Dr. Michael A. Gibson,

University of Tennessee at Martin

FTF 44

Epilogue to A Day in the Devonian



In the Vulcan Materials limestone quarry near Parsons, Tennessee, Fall, 2018...

Three miles north of present-day Parsons city limits, on the right hand side of the road, is the Parsons Vulcan Materials limestone quarry. Many locals work at the quarry and most residents drive past it every day with little thought about the rock being quarried. To them the limestone is just a building material resource. The limestone is used as rip rap along the sides of roads and interstates to stabilize the cut surface from sliding. One particularly large and new example of this occurs along Interstate 40 at the Birdsong exit, just before crossing the Tennessee River. Vulcan crushes the limestone into various sizes of gravel for a variety of uses such as driveways, foundations, etc. Most people simply walk over it with little thought of where it came from, how it forms, what secrets it has about past worlds.

Dr. Michael Gibson and his students have been to the quarry many times before, conducting field trips, trying to give college geology students an understanding and appreciation for the factual observations and the story that weaves this factual information into a coherent whole reconstruction of an ancient environment. In a quarry like this one the vertical exposure of so many rock lay-

ers is bound to reveal change and change is one of those inevitable processes that paleontologists document. Actually, Gibson has spent a significant portion of his professional career unraveling and documenting the story in these rocks, having begun working in this quarry in 1984.

On this sunny, warm fall day Gibson and his students sit on a boulder in the quarry discussing how best they could reveal the story of these rocks to students, teachers, and fossil enthusiasts. Gibson first points out that they are standing on the remains of an ancient ocean, one of several that covered Tennessee at different times. Additionally this sea was a tropical ocean akin to the clear warm water of the Caribbean. Also, nearly every fossil species in these rocks are extinct...truly a lost world. Gibson explains that these deposits in West Tennessee are now internationally famous because of the fossils they contain and the story the stratigraphy preserves. Over the years he has led dozens of field trips for geologists from all over the world to this very spot. Most non-geologists find it difficult to believe that Tennessee used to be under hundreds of feet of ocean water, multiple times! How can sea level change so drastically? What causes the changes? What was the sea floor like 400 million years ago? What caused pulsations of mud to spread over

the limey "carbonate" bottom smothering communities of sea life? How did life cope with episodes of mud invasion? What does the composition of the rocks and minerals in the layers reveal about the chemical environment of the ancient sea floor? How can events that occurred after the rocks were formed be distinguished from the original forming processes? So many questions! Where does one begin?

Gibson explains to his students that the approach to understanding this ancient world is relatively simple in concept, but the multiplicity of interacting things creates the difficulty. All objects are the products of the environment that make them. The visible characteristics of the object are dictated by the conditions of their formation. While we may not be present to see an ancient environment and the daily happenings in the environment, we can still deduce the processes scientifically. As an illustration, Gibson pulls out a silver dollar, flips it into the air, and passes it around for his students to see. He explains that one way to practice this type of thinking is for them to study the physical attributes of the coin and from its characteristics determine everything they can about the people that made it, processes they used, materials they favored, etc. Fossils, rocks, and minerals are

Continued, P. 9

Fabulous Tennessee Fossils objects
Continued from P. 8 with dif-
fering

characteristics. As these characteristics differ in describable ways that often show patterns, they reveal the changing conditions of their formation. Looking around the large quarry excavation, an excavation that has been going on since the 1960s, they see so many different rocks and layers. Once again Gibson and his students are awed by the abundance of clues in the rock.

Presently, Gibson spies a particular slab of limestone that catches his interest. He draws the students' attention to it and the large group of fossils embedded in it. He tells them to sit around the slab and write down all observations they can about what they see: composition, layering, fossils, condition of the fossils, color, thicknesses, change in composition...anything they can see. He tells them to make observations only, no interpretations. At least not yet; good use of the scientific methods requires that observations are taken separately from interpretations of these observations. The students generate a long list of observations; clues that will ultimately tell them the story of this rock and how it formed. Excitedly they notice fossil sea shells in shale between thicker layers of limestone, also with fossils, but of a different variety. An entire community of brachiopods, crinoids, sponges, and bryozoans can be seen as they probably lived on the sea floor. The shells are essentially complete and do not show the wear and tear of wave action or the burrowing of worms.

Some are left in their original living position. A large range in the sizes of the brachiopod shells indicates that all age groups were killed in a single event. Even the mud of the shale shows a change in texture and color indicating a storm event of higher energy brought this material further into the ocean basin than normal, smothering many of the life forms. Of special interest is a cephalopod which occurs as a mud filled cast with no trace of the original shell. Modern forms of this animal build their shells of aragonite instead of the more stable calcite. Did these animals build their shells of aragonite that became susceptible to solution leaving only the casts behind?

One student is very interested in the fossils that were pyritized. When most life forms die scavengers consume the fleshy parts leaving only the hard parts to fossilize. In this case the fleshy parts were buried and became reducing microenvironments allowing sulfur from the fleshy parts to combine with iron. The scarcity of pyrite grains throughout the rock and the close association of pyrite to fossils supports this explanation. Another very interesting mineral occurrence is in association with the fossil *Scyphocrinites* bulbs. Some of these bulbs look like geodes with beautifully formed calcite crystals attached to the walls and extending into the open cavity. The crystalline form of these calcite crystals is also somewhat unusual in that they are hexagonal prisms terminated with rhombohedral faces. A casual glance at these crystals might lead the observer to think that the mineral is

quartz. The acid test, however, proves their composition. The student notices several more minerals inside the bulbs: chert, quartz, dolomite. What prompted these crystals to grow as they did? When did the crystals grow?

As Gibson and his students sit on the remains of this ancient sea floor tallying their observations, they begin to make hypotheses to explain what they are seeing. They apply the scientific method to test their hypotheses and slowly a vision of the past comes to life for them. They make observations on the physical, biological, and chemical features of the rocks. By comparing these observations with their knowledge of how processes work in today's world, they begin to reconstruct the events leading up to the deposition of the sediment and the preservation of the organisms. Changes that occurred after deposition that masks the true story are determined and the mask of change removed. For them, the alien world begins to unfold in every increasing detail. They can actually see struggle for life amid nature's meteorological tantrums...395 million years ago! The next best thing to being there is to envision it. This slab appears to have preserved the remains of a cephalopod mollusk that died rather suddenly and was buried quickly, along with the other sea floor inhabitants on this small three-foot area of ancient sea floor. Something catastrophic happened here, probably a storm event. While this storm resulted in the demise of these organisms, it also provided the burial conditions to guarantee their preservation. *Continued, P. 10*

MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

Fabulous Tennessee Fossils Millions of years after that, in the 1960s, Vulcan Materials opened this quarry to use the limestone it contains as a resource for society. Nearly 70 years after that, Dr. Gibson and his students happen upon a slab of rock that has not been eroded away. They analyze the contents of the rock and are able to deduce the physical, chemical, and biological parameters the rock preserves. With great excitement and reverence for Earth's history, they bring back to life the events of this alien world. Time travel...science style! Looking across the vast expanse of fossiliferous rock slabs that seem to go on for acres and acres, they wonder what wonderful secrets the other rocks hold. So much rock, so little time...

Summer Indoor Picnic and Rock Swap—Pictures



Photo Credits: Marc Mueller, Matthew Lybanon

July Board Minutes

Mike Baldwin

Called to order 6:32. Present: Charles Hill, Bonnie Cooper, Bob Cooper, W. C. McDaniel, Mike Baldwin, Carol Lybanon, Matthew Lybanon, Dave Clark, James Butchko.

Treasurer: June 2 we received more CD interest. Rent paid through end of year. Bonnie distributed May bank statement and June checking register and summary page. Discussion followed concerning Show distribution of funds to the club and procedures to

close out the books on the 2018 Show. W. C. suggested we wait until we get confirmation of fees due to the Agricenter and a signed contract for the 2019 Show before distributing funds to the club. Report accepted.

Secretary: Mike emailed June minutes earlier. He distributed hard copies of the June minutes. Report accepted.

Adult Programs: No change in program list for the year. November not planned yet. August 13, Jimmy McNeil, "Travels in Africa"; September

14, Dr. Nina Bahai-Riding, "Lonnie Looper Fossil Collection"; October, David Clarke, "Amber"; December, Holiday Party.

Field Trips: 20-Mile Creek will not be rescheduled for summer due to fungus. July: Pfeiffer Museum in Piggett, Arkansas. Club will donate \$25 to the museum and club members will be asked to donate \$1 at the door. Discovery Park scheduled for August 18. September: Hedger Quarry in Jonesboro. Discussion followed about *Continued, P. 11*

July Board Minutes Continued from P. 10 the possibility of having a club trip to Coon Creek.

Membership: One new Member since last Board Meeting.

Newsletter: Matthew has lists for field trips and adult programs through the end of the year.

Historian: We had a very nice rock swap at W. C. and Cornelia's house. The swap in August is on track. Carol needs information about any auctions and other activities that may be going on at the swap. W. C. will ask Lou White to be our auctioneer. There will be a "Best Hawaiian Shirt" contest, which could be chosen by shout-outs. Participants will be required to model their shirt. Mildred Schiff volunteered to coordinate hospitality volunteers and meeting night procedures. Carol picked up plates at Sam's.

Show: No new information.

Librarian: Nannett McDougal-Dykes looked into casters at Home Depot, but they are expensive. Bob will look into another option. 14 new books have been added.

Junior Programs: No report.

Web: Website has been updated with information for July and August. USPS newsletters have been printed and will be mailed on Friday. Discussion followed about printing of USPS issues. Considering dropping printed versions at the first of the year.

New Business:

- Nominating Committee—Carol Lybanon, Dave Clarke, Nannett McDougal-Dykes, W. C. McDaniel. Mike volunteered for Youth Director if needed.
- Promotional tablecloth with our logo printed on it, which would be approximately \$200.00. A 2-foot-wide runner would cost about \$50.00. W. C. suggested 2 runners. Mike and Carol will coordinate.
- Donation suggestions funds to Chu-

calissa in the name of someone. Amount will be determined after Show distribution to the club.

- Suggestion made to survey Members to find out talents and skills they are interested in sharing with the club.
- Carol will take minutes at the July Membership Meeting.

July Meeting Minutes

Mike Baldwin

Called to order 7:10. President Charles Hill welcomed everybody. Membership Director Bob Cooper recognized three visitors. Bob also announced that club t-shirts and pins are available for sale tonight. Charles announced that Mike Baldwin has volunteered to serve as Youth Director. Before Charles called for a field trip report he warned that people should take care in this hot weather. Jim Butchko reported our next field trip will be July 21, to the Matilda & Karl Pfeiffer Museum in Piggott, Arkansas. Meet time is 11:00. August 18 field trip will be to Discovery Park of America in Union City, Tennessee. Jim hopes the weather will be somewhat cooler in September, when the field trip will be to Hedger Quarry in Jonesboro, Arkansas.

Carol Lybanon gave a report on the upcoming indoor rock swap, which will be at our August Membership Meeting. She listed the activities. Members need to bring a dish to share. Carol also asked for three or four volunteers to help set up.

Nannett McDougal-Dykes gave the library report. The library will now have a new, reference-only area. She has received several donations for this new section. She also told Members that the library cabinets need new wheels. She is working on that problem and hopes to have new wheels on the cabinets soon.

We had three displays, presented by Leo Koulogianos and Jan Harris

(agates), Kim Hill (pyrite and 20 Mile Creek finds), and Ray Carnahan and sons Landon and Oliver (pyrite).

Charles turned the meeting over to W. C. McDaniel. Before introducing our speaker, W. C. gave a list of the programs through the end of this year. W. C. introduced Jimmy McNeil, our speaker for this evening's program, on his August 2017 trip to South Africa, Namibia, and Botswana.

Jewelry Bench Tips by *Brad Smith*

SETTING A RIVET

Riveting is usually done with a cross peen hammer, but I've found it's a lot easier for me to hit the rivet wire when using a small ball peen—and the smaller the better. Shown here is one I typically use. It's about 3/8 inch diameter on the back of a chasing hammer, but I've been thinking that a 3/16 inch ball might be even better. Look for a yard sale hammer you can modify to work.




Pick Up a Few New Jewelry Skills With Brad's "How To Do It" Books, <http://amazon.com/author/bradfordsmith>



MAGS At A Glance

September 2018

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30	31	1
2	 3	4	5	6 Board Meeting, 6:30 pm, St. Francis Hospital	7	8
9	10	11	12	13	14 Membership Meeting, 7:00 pm, Nina Baghai-Riding, "The Loper Collection"	15
16	17	18	19	20	21	22 MAGS Field Trip, Hedger Aggregate, Jonesboro, AR
23	24	25	26	27	28	29 DMC Field Trip, Willis Mtn. Kyanite Mine, Dillwyn, VA
30	1	2	3	4	5	6

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