MAGS Rockhound news

VOLUME 50 • NUMBER 03 • MARCH 2004

A monthly newsletter for and by the members of Memphis Archaeological and Geological Society

INSIDE THIS ISSUE

FOSSIL AMBER OR FOSSIL RESIN

Large ant and cricket nymph in fossil amber; pleistocene to pliocene; Andes Mountains of South America. Image courtesy of FossilMall.com.

ROGER PERKINS, FOSSILMALL: Amber is the popular name for fossilized resin of botanical origin. The proper scientific terminology is fossil resin, but I will use the amber and fossil resin synonymously. The word amber also denotes a golden color that amber predominately reflects (recall that when human eyes see color, it is actually the portion of the visible light spectrum that an object reflects that is detected). In fact, amber reflects many frequencies of light, including red, green and blue that together constitute the entire visible spectrum.

Archaeological findings show that amber was one of the first materials prehistoric humans used for ornamentation, with instances dating back as far as 30,000 years. Use of fossil resin for jewelry and other decoration continues unabated, and amber is often considered as a gemstone. Amber is also valued for its botanical and animal inclusions that are trapped by the sticky resin as it flows as sap, which is also organic. Of course, other life is captured including microscopic bacteria that often produce gas bubbles, and various fungi. Both the botanical and animal inclusions not only add beauty, but are of potential scientific value in the study of taxonomy and evolution. Animal inclusions are usually invertebrates, specifically arthropods, and only extremely

see Fossil Amber on page four . . .

MARCH MAGS EVENTS

04	6:30p	Board Meeting @ Blue Plate Café, 5469 Poplar Avenue
12	7:30p	General Meeting @ Shady Grove Presbyterian Church, 5535 Shady Grove Road, Memphis [bring refreshments and a displays]
		Program: "Alabama Petrified Wood" presented by Richard Carol
		Mini-MAGS Youth Program: "Fossils" presented by Roger Van Cleef
13	9:00a	DMC Field Trip to Cargill Phosphate Mine, FL [see page 6 for details]
18	7:00p	M3 Micromounters Meeting at the home of Roger Van Cleef
27	8:30a	MAGS Field Trip to North Alabama [see page 3 for details]

MAGS BOARD

MAGS Rockhound News is published monthly by and for the members of the Memphis Archaeological and Geological Society. Please send your comments and articles to Mike Baldwin, 367 N. Main St., Collierville, TN 38017 or email them to editor@memphisgeology.org . ©2004.

FROM THE PRESIDENT

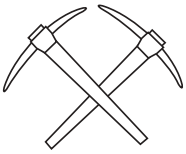
As our "quiet" February ends and we approach the months leading up to the 25th annual Mid-America Mineral, Fossil, Jewelry Show, it's time we crank up the talk and promotional efforts. The show is our most important event of the year. We move from the relative isolation of meetings and field trips and put our hobby out for all the Midsouth to see and appreciate. We do a pretty good job of this because of an active and committed membership. The continued success depends upon you. So what can "I" do?

There are multiple ways to contribute your time and to the success of the show by: **[1] VOLUNTEERING.** We need firm commitments for help before, during and immediately after the show. From moving items from storage, selling tickets, helping with the ROCKZONE, overnight security or returning items to storage. Sign up sheets will be available at the March meeting. **[2] THE FRIDAY SHOW DINNER** serves as good transition from the preshow work to the opening of the doors to the public on Saturday morning. It's an enjoyable time and as we recognize the 25th anniversary of the show, a time to celebrate. Help by signing up to bring food for the event. Remember the show furnishes the barbecue (meat is already bought and cooked, just waiting for the final touches from Dean and Dana) and all the fixings. Sign up sheet will be available at the March meeting. **[3] DISTRIBUTE** promotional announcements and club tickets. This is a good way to advertise the show. Remember that as each club member distributes the club tickets they must be signed by you and be original (no copying). Ticket holders get in free and you pay the club $1 for each ticket actually used. These tickets will be available at the March meeting. **[4] MATERIAL.** We have a continued need for gem dig and grab bag material. We will stuff the grab bags at the April membership meeting. **[5] CLUB DISPLAYS** are in important part of the show and in the next few weeks we will ask you to show of some of your field trip finds. In addition we will feature petrified wood from the Midsouth, so you rockhounds that have some really large specimens will be ask to participate by exhibiting.

In addition to the show, the club's membership meetings and field trips are in full swing. The displays the first two months have been limited in quantity and high in quality. So let's have a good showing at the March meeting. In closing if you have not renewed your membership, this is the last award-winning newsletter you will receive.

WC McDaniel

FEBRUARY 2004 MAGS FIELD TRIP



SATURDAY, MARCH 27, 2004
NORTH ALABAMA • PETRIFIED WOOD
THIS FIELD TRIP IS OPEN ONLY TO MAGS MEMBERS

This will be a one day collecting trip to northern Alabama [approximately 2.5 hours from Memphis]. We will be collecting fine quality petrified wood. The details of this trip will be available at the March MAGS meeting. For more information, please contact David McIlwain. Note that this one is open ONLY to MAGS members.

If you want to go, you must sign the list. You can sign the list at the March MAGS meeting or by contacting David McIlwain. If you sign up and decide not to go, please contact David McIlwain as soon as you know.

David McIlwain, MAGS Field trip Coordinator
305 Caitlin Drive, Oakland, Tennessee 38060-4259
Home (901) 465-7388; Cell (901) 266-1446
Office: (901) 867-4303; E-mail:
davidmcilwain@netscape.net

MAGS MICROMOUNTERS [M^3]

CORNELIA McDANIEL: The first M^3 meeting of 2004 was held at the home of Roger Van Cleef on Thursday, February 19. Present were Roger Van Cleef, Idajean Jordon, Nancy Folden, W.C. & Cornelia McDaniel. We began our meeting by lamenting the membership losses that this new year has brought. We examined Brookite pyramid crystals on smoky quartz that had been mounted on tack, singular brookite pyramid crystals and very colorful opal from Spencer, Idaho. Idajean donated plastic boxes with foam inserts for use in preserving specimens. We adjourned our meeting a bit early, but it was a very exciting evening altogether.

Brookite information courtesy of Ametyst Galleries, Inc.; http://mineral.galleries.com/minerals/oxides/brookite/brookite.htm; 02.25.04. Information gathered for educational purposes under the provisions of the "Fair Use Act of 1976".

PHOTO CREDIT: mineral.galleries.com

Brookite is a polymorph with rutile and anatase. They all have the same chemistry, TiO_2 [titanium oxide], but they have different structures. At higher temperatures, about 750ºC, brookite will revert to the rutile structure. Brookite shares many of the same properties as rutile, such as color and luster and some properties are nearly the same, such as hardness and density. [see page 9]

DIRECTORY ADDITION

CORNELIA McDANIEL: MAGS welcomes a new family to our membership. Please add them to your directory.

Richard, Donna, Christopher, Anna, Joseph, and Timothy Marsh
P.O. Box 38384
Germantown, TN 38183
901-756-5307

DEADLINE FOR SUBMITTING NEWS, ARTICLES, ANNOUNCEMENTS, OR PICTURES FOR THE APRIL ISSUE OF MAGS ROCKHOUND NEWS IS **MARCH 21, 2004**

2004 ROCK SHOW NEWS

Memphis Archaeology and Geological Society presents the

25th Annual Mid-America Mineral Fossil Jewelry Show

Rocks • Gems • Minerals • Fossils • Jewelry • Beads

Saturday April 24 9-6 • Sunday April 25 10-5

Pipkin Building, Midsouth Fairgrounds, Memphis

Admission: Adults $3; 12 & under $1; scouts and leaders in uniform free

Portion of admission benefits Memphis Ronald McDonald House

- 30 dealers(240 tables) from 15 states with expanded fossil section including a selection of amber.
- Exhibitions include: [1] **Meteorites from the Smithsonian** and **the Geology of the Wells Creek Structure–A Tennessee Meteorite Impact Site**. *Presented by the University of Tennessee at Martin*; [2] **The Looper Collection–Ice Age Fossils from Southeast Arkansas and Northwest Mississippi**. *Presented by Delta State University*; [3] **Magnet Cove Arkansas–100 minerals within five square miles**. *Presented by the Arkansas Geological Commission*; [4] **Petrified Wood and "Glacial Rocks" of the South**. *Presented by Memphis Stone and Gravel Company*; [5] **Food Table** (a rock banquet); [6] Club displays of **"Field Trip Treasures"**; [7] **Petrified Wood of the Midsouth** (collected by club members); and [8] **Native American Archaeological Exhibits from the Midsouth**.
- Demonstrations including lapidary, wire wrapping, flint knapping, Indian pottery and micromounting of fossils and minerals.
- Wire wrapping classes–11:00 and 3:00 both days: $15-advance registration advised; call 901.274.7706.
- ROCKZONE–kids area with gem dig, dry sluice box, displays
- Grand Door Prizes include:

  A Piece of Outer Space–a meteorite (Sikhote-Alin)

  A Piece of Eight (Silver) from the sunken treasure ship Atocha

For more information visit www.memphisgeology.org or call 901.274.7706

MARCH BIRTHDAYS

Birthstone = Aquamarine

3 - Dana Griffin
6 - Rick Rodgers
8 - Scott Norris
10 - Tess Cannito
11 - Nancy Folden
11 - Casey Randolph
12 - Ernest Babb
18 - Stacey Stevenson
22 - Sherida Helms
23 - Dorothy Foster
24 - Luke Ramsey
26 - Stephany Rainwater
27 - Ann Huber
29 - Angela Cates
30 - Hisami McNeil
31 - Patrick Hill

SUNSHINE REPORT

Our thoughts are with **Bill Scheffer** following the loss of his brother, and with **Patty Hearn**, whose husband, **Pete**, died in a house fire on February 22. **John Jones** is back home from the hospital and continues to improve. Several members have experienced this winter's flu and cold season . . . up close and personal.

FOSSIL AMBER . . . continued from page one

rarely a vertebrate such as a tiny lizard. Fossil resin inclusions are predominately insects, which should be no surprise since botanical resin is an evolutionary adaptation of plants that is, in part, for protection against insects.

Fossil resin's molecular constituency is mainly carbon and hydrogen atoms that readily form hexagonal rings. Molecular bonding between the rings increases over time (called polymerization), and the sticky resin becomes hard. There are other types of atoms in trace to larger amounts that alter physical properties and may be substrates to certain organic solvents. For all practical purposes, the hardened resin, or amber, is a "plastic". Just when the resin becomes amber, or a fossil, is not defined, and is perhaps not definable. It is even contentious, since fossil resin is a commercial product in a competitive market. Younger amber is often called copal, though it is essentially as hard and its physical properties differ little from older resins. Amber comes from throughout the world, even the Arctic. However, in terms of commercial availability, the Baltic area of Europe produces vast amounts, followed by the Dominican Republic in a distant second, with minor amounts coming from Central and South America, and more specifically, Mexico and Colombia, respectively. Amber from other localities is minuscule.

Baltic Amber

An enormous amount of fossil resin is extracted on the shoreline of the Baltic Sea, and these strata are dated to be Eocene in age, give or take a few million years, thus making it some of the oldest amber available that is available in commercial quantity. The largest Baltic amber mine is in Kaliningrad, Russia, but Baltic amber is also found in Lithuania, Latvia, Estonia, Poland, Russia, and sometimes washes ashore far away in Denmark, Norway, and England. Fossil inclusions are relatively rare, almost always in isolation and usually tiny, and the amber is normally occluded with botanical debris and bubbles; for this reason, fossil specimens are best made viewable in pieces cut to small size prior to polishing, and pictures many times require a trinocular microscope. Dominican Amber Geological data for amber from sedimentary deposits in the Dominican Republic predict an age dating to the Oligocene, in the range of 20 to 30 million years old, presuming the resin is a primary in situ deposit, and not a secondary deposit by transport/erosion etc. Since resin-producing trees are still abundant in this tropical island area, resins of any age are possible.

see Fossil Amber on page eight . . .

MAGS ROADCUT

Welcome to the MAGS ROADCUT. ROADCUT *is designed to provide general information and news for rockhounds. .*

. . . cleaning tip. The Vibro tumbler is an excellent cleaning machine. I have cleaned crinoids from Vulcan Quarry, removed most of the perlite from Apache tears and mica crust from Staurolites (fairy crosses) by running the material in my rough grit barrel with a small amount of water for about 30 minutes. Clean and repeat the process a couple times. If you don't clean after about 30 minutes you get a gooey, slurry mix and you are wasting your time and electricity. I also used the Vibro tumbler to clean tumbling material between grit and polish stages. I run the material with a water and soapy mix for about 30 minutes to remove any film on the rocks.

. . . safety tip. It is strongly recommended you do not use antifreeze for cutting oil in your diamond saws.

. . . fossil news. A fossil discovered in 1920's and placed in a storage cabinet was recently examined and determined to be a new insect, making it the oldest at 400 million years.

. . . kirby wood. A section of Nonconnah Creek that runs parallel to Nonconnah Blvd continues to produce petrified wood that is a dull red/brown with a smooth finish. It needs a name and I propose "Kirby Wood" named after a nearby street.

Send your MAGS Roadcut News to WC McDaniel at cfmcdaniel@worldnet.att.net

SOUTHEAST FEDERATION NEWS

DMC Program of the SFMS Field Trip Committee • An Official Field Trip of the Gem and Mineral Society of the Palm Beaches (Host)
9:00AM [EST], Saturday, March 13, 2004
Cargill Phosphate Mine and FossilFest 2004

FIELD TRIP: Cargill Phosphate Mine
OTHER EVENTS: Tampa Bay Fossil Club Show, Florida State Fairgrounds on March 13th and 14th, 2004
THE ICE AGE RETURNS! • FOSSILFEST 2004! • TAMPA
The Ice Age invades the Florida State Fairgrounds on March 13th and 14th, 2004 when the Tampa Bay Fossil Club presents the 17th annual FossilFest 2004! Great Photo Opportunities! • Dr. Gordon Hubble from the Discovery Channel's Shark Week. • Prehistoric remains of Lions, tigers, bears, and SHARKS. • Children's Fossil Mine. • Native American Artifacts on display. • Lions and tiger and bears, and SHARKS, will be just some of the fossilized remains on display during the annual event. Prehistoric sharks will be the featured fossil at FossilFest. FossilFest will present lectures by Dr. Gordon Hubble from the Discovery Channel's Shark Week and other prominent shark experts. Club members will display museum quality specimens found right here in Florida,s abundant fossil record. There will be vendors from all over the world on hand to display and sell fossils as well. Artifacts from Florida,s prehistoric Indians will be on also be on display. The highlight of FossilFest is always the children's fossil mine where kids get the opportunity to dig for their very own fossils!

For a nominal fee, children can dig for their very own fossils. Club members will be on hand to help children identify their treasures. The kids get to keep what they find! FossilFest hours are: 9 AM until 6 PM on Saturday and 9 AM until 4 PM on Sunday. Admission is: Adults $4.00, Children 12 and under are FREE with paying adult.

Field trips are open to all members of associated clubs of the DMC program of the SFMS Field Trip Committee and to all members of SFMS member clubs who have provided their membership with SFMS liability insurance. Because of insurance requirements, members of the GENERAL PUBLIC are NOT invited on this or any DMC program field trips!

SFMS & OTHER CLUB SHOWS AND EVENTS

Mar. 11-14, Deming, NM–39th annual show, "Rockhound Roundup"; Deming Gem & Mineral Society; Southwestern New Mexico Fairgrounds; Thu. 9-5, Fri. 9-5, Sat. 9-5, Sun. 9-5; free admission; displays, demonstrations, jewelry, rocks, drawings, raffle, field trips, silent auction, live auction; contact Vicky Lindsley, P.O. Box 1459, Deming, NM 88031, (505) 544-0839.

March 19- 21, Rome, GA– Valley and Ridge Gem and Mineral Show; ROME GEORGIA MINERAL SOCIETY INC. Minerals, Gems, Fossils, Jewelry, Crystals, Demonstrations, Door Prizes and Exhibits; Friday & Saturday, March 19 &20, 9:00 a.m. - 6:00 p.m.; Sunday, March 21, 12:00 noon - 5:00 p.m.; FREE ADMISSION; New Location; Garden Lakes Gym, Garden Lakes Blvd., Rome, Georgia; For Show Information–Jose Santamaria, Show Chair (706) 233-9828 * (770) 386-0576 x401; joses@weinmanmuseum.org

March 20-21, Tampa, FL–Tampa Bay Mineral & Science Club. Gem, Mineral, & Jewelry Show. Florida State Fairgrounds, 4800 U.S. Highway 301 N. 20th, 10-6; 21st, 10-5. Doug Heym, 813-626-6997, rockclub@tampabay.rr.com.

MAGS REVIEW

JANUARY 6, 2004 BOARD MEETING NOTES

RAYNEE RANDOLPH: The MAGS board of directors met January 6, 2004 at The Blue Plate Café, 5469 Poplar Avenue. The following were present: Mike Baldwin, Idajean Jordan, Cornelia and W.C. McDaniel, David McIlwain, Park and Terri Noyes, Raynee Randolph, Bill Scheffer, Roger Van Cleef, Lou White, and Anna Sisk. The secretary's minutes from the December board and general meetings were accepted and approved with corrections. The following reports were given: (1) 1st VP: The field trip for February will be Saturday the 21st. We will be going to Harrisburg Arkansas, with the Arkansas club, for a trip to Razorback Quarry. March 20th we will be going to North Alabama, and April 17th to the Crater of Diamonds in Arkansas. (2) Program: January will be an overview of ethics and safety. Roger will also show us the correct method of labeling and storing our specimens. February we will have a tumbling demonstration by our own David McAlister. (3) Editor/Web: Please see Page 10 of the Rockhound News for a list of the awards our newsletter has received. There will be a bulletin board for the website soon. (4) Juniors: January 2004 we will have a program on diamonds and such. In February we will have a TV program. (5) Membership/Sunshine: A get well card was sent to Charlie McPherson. Condolences were sent to the family of Mildred Laster. A motion was made to accept three new membership applications. The motion was seconded and the vote carried the motion. (6) Show: The next committee meeting will be Monday, Jan. 12th. (7) Old Business: A 27inch TV/DVD/VCR has been purchased for the club. A cart is needed to make it portable. If you know where to locate one please tell W.C. (8) New Business: Dick McKitrick and Raynee Randolph have formed A by-laws modification committee. The Commercial Appeal is interested in featuring MAGS in the Community Appeal section of the paper. More info later. Meeting Adjourned @ 7:15pm.

JANUARY 9 GENERAL MEETING NOTES

RAYNEE RANDOLPH: MAGS January General Membership meeting was held at Shady Grove Presbyterian Church on January 9, presided by President W.C. McDaniel. There were 38 members and 10 visitors present. They were Claudia Butler, Chuck and Lorea Lirette, Donna Marsh with Christopher, Anna, Timothy, and Joseph, and Eric and Eva Jetter. One of the door prizes for the show this year will be a meteorite, which we have to look at tonight. It comes to us from Russia. So come to the show in April and you may be the winner. (1) Field trips: There will not be a field trip in January, but February will be our first trip of 2004. We will be going to Razorback Quarry with the Arkansas club in North Harrisburg AK. On the 20th of March we will be going to North Alabama for petrified wood. April 17th will take us to The Crater of Diamonds, AK. We have information that the crater will be "dug up" some four feet down and all the soil turned over. Who knows what we might find!!!! (2) Programs: The program this evening will be presented by W.C. and Roger Van Cleef. "Ethics, Safety and Insurance" and Roger will show us proper labeling and storage of our specimens. In February we will have our own David McAlister demonstrate tumbling techniques. (3) Displays: #1 Lou White - Vulcan Quarry #2 Dr. Joe Young - Mexican Geodes #3 Chuck and Lorea Lirette - Mexican/Arkansas collection. Display Winner: Three door prizes were awarded and the meeting adjourned @ 8:45 for refreshments.

WEB STATISTICS

MIKE BALDWIN: Here's a brief look at our website (www.memphisgeology.org) from 01.21.02 through 02.24.04:

Visits* 107,398
Hits** 463,258

Top pages in the past 30 days:

- Explorer0203.pdf ..... 549 hits
- Homepage ..... 506 hits
- RockNews1202.pdf ..... 381 hits
- Explorer0903.pdf ..... 359 hits
- RockNews0203.pdf ..... 321 hits

Average visits/day this month 273

** visit=every time someone comes to the site*
*** hit=every page viewed on the site*

FOSSIL AMBER . . . continued from page five

The older fossil resins are from deep mines in the hillsides, and the extraction can be a dangerous proposition, with risk of being buried in a cave in. The insect inclusions in Dominican amber are fairly abundant, the insects larger, and the amber of higher clarity than found in Baltic amber. Though uncommon, fossil association are found more frequently in Dominican amber.

Colombian Amber

Far and away the most fossiliferous amber originates in Colombia, albeit it has become fairly widespread that all fossil resin from Colombia is called copal. The amber versus copal distinction is lost on many geologists and paleontologists that are aware that scientific data is unavailable to determine the age of fossil resins from this region. The consensus age estimate seems to be Pleistocene (up to 2 million years old), but estimates range to the Lower Miocene (about 20 million years old). Though geological studies are unlikely soon in this region that is controlled by drug cartels, it seems safe conjecture that there is a large range of age across different deposits, similar to that of the Dominican Republic. In the Dominican Republic, mine cave-ins are a danger, in Colombia the danger is AK47's. Whether amber or copal, young or old, the fossil insects and other arthropod inclusions and their associations are truly sublime. Perhaps the most impressive aspect of Colombian amber to those with a scientific propensity are the wonderful fossil associations. So many species are often in association that the specimen will represent an ecological cross section of an ancient rainforest.

Fossil Insects

Unlike the trilobite that has left a prodigious fossil record, the preservation of insects in sedimentary matrix is relatively rare, and essentially limited to the Laggerstat sites. The reason for the scarcity of insect fossil is the poor preservation potential of the insect's exoskeleton. Like other Arthropods, insects have an external skeleton called an exoskeleton. Unlike the thick and calcified trilobite exoskeleton, the insect exoskeleton is made of a thin, plastic-like material called chitin, along with a tough protein. This thin, waterproof covering simple does not preserve well in most oxygenated environments, making insect fossils sparse despite the tremendous number that could have been preserved. The exception is in fossil resinite (amber, by street name), where it is possible for even the minutest details to be preserved. Despite their huge strength to weight ratio, insects were often to small to escape the sticky resin exuded by trees, and which later became a fossil itself, with physical properties akin to modern polymerized plastics.

Insect evolution is a powerful illustration of decent with modification. The earliest known insects are tiny wingless forms from the early and middle Devonian. Insect flight developed with suddenness resembling the Cambrian explosion during the middle Carboniferous, apparently the result of the significant survival advantage that was accrued. By the end of the Carboniferous, the subphylum insecta had evolved into a large number of distinct orders. During the Permian, new insect forms appeared. Blattoid and Orthopteroid orders attained their greatest diversity, and new groups like the Psocoptera, homopteran Hemiptera, Mecoptera and Coleoptera became ubiquitous and diverse. The Permian extinction wiped out nine orders of insects, and more orders disappeared in the Triassic or the early Jurassic. However, surviving orders such as Neuroptera, Mecoptera, and Diptera, and Coleoptera underwent further adaptive radiation establishing many families extant in modern times. So exquisite is insect design that most groups were well formed by the Cretaceous and remain largely unchanged in appearance during modern times. Taxonomic research on fossil insects has always been relegated to a subordinate role when compared to that of living species. There are large numbers of undetermined fossil insects in many collections throughout the world awaiting descriptions, but only a small fraction of systematic research has ever been devoted to these fossils.

MINI-MAGS NEWS [WHAT'S HAPPENING WITH THE KIDS]

BROOKITE:

PHYSICAL CHARACTERISTICS

- **Color**: dark brown to greenish black
- **Luster**: adamantine to submetallic
- **Transparency**: crystals are opaque
- **Crystal System**: orthorhombic; 2/m 2/m 2/m
- **Crystal Habits** include the typical tabular to platy crystals with a pseudohexagonal outline. Magnet Cove specimens tend to be more equant with complex facets.
- **Cleavage:** poor prismatically and in the basal direction.
- **Fracture**: subconchoidal and uneven.
- **Hardness**: 5.5 - 6
- **Specific Gravity**: 3.9 - 4.1 (average for metallic minerals)
- **Streak**: light brown to white.
- **Associated Minerals** include anatase, rutile, quartz, feldspars, chalcopyrite, hematite and sphene.
- **Notable Occurrences** include Magnet Cove, AR; Butte, MT; Somerville, MA; and Ellenville, NY; Eicham, Austria; Tremadoc, Wales, England; Ural Mts., Russia and at St. Gotthard, Switzerland.
- **Best Field Indicators**: crystal habit, luster, density, streak, associations and locality.

Brookite information on page 3 and page 9 courtesy of Ametyst Galleries, Inc.; http://mineral.galleries.com/minerals/oxides/brookite/brookite.htm; 02.25.04.

ON THE MOVE:

CONTINENTAL DRIFT AND PLATE TECTONICS

NASA: Have you ever noticed how South America and Africa seem to fit together? If you have, you aren't alone. Sir Francis Bacon first noticed this peculiarity in the 17th century. Today, scientists believe that 200 million years ago the Earth's continents were joined together to form one gigantic supercontinent, called Pangaea. As the rock plates that the continents sit on moved, the supercontinent broke up and began to move apart. This "continental drift" is far from over! The Earth's surface is constantly moving and reforming, but so slowly that you or I can't observe it ourselves. Only by taking very small measurements over a long period of time can scientists tell something is happening.

The Earth's crust is constantly moving, both vertically and horizontally, at rates of up to several inches a year. A widely-held theory that explains these movements is called "plate tectonics." It was developed in the mid 1960s by geophysicists. The term "plate" refers to large rigid blocks of the Earth's surface which appear to move as a unit. These plates may include both oceans and continents. When the plates move, the continents and ocean floor above them move as well. Continental Drift occurs when the continents change position in relation to each other. Perhaps 200 million years ago the Earth had only one giant continent, from which today's continents broke apart and drifted into their current locations.

The continents look as if they were pieces of a giant jigsaw puzzle that could fit together to make one giant super-continent. The bulge of Africa fits the shape of the coast of North America while Brazil fits along the coast of Africa beneath the bulge.

If the continents were cold enough so that ice covered the southern continents, why is no evidence found for ice in the northern continents? Simple! The present northern continents were at the equator at 300 million years ago. The discovery of fossils of tropical plants (in the form of coal deposits) in Antarctica led to the conclusion that this frozen land previously must have been situated closer to the equator, in a more temperate climate where lush, swampy vegetation could grow.

Image and copy compiled from Sharron Sample, NASA Official; NASA Kids; http://kids.msfc.nasa.gov; Marshall Space Flight Center, Huntsville, AL; 02.26.04.

ANNOUNCEMENTS

FOR SALE: 8" faceting machine, handcrafted by a master metalworker and faceter, with lots of laps and dop sticks (brass and wood)--as is $200.00. Contact George and Rena Everett (662) 234-8561.

FOR SALE: 40 years of "Lapidary Journal". Most are still in their plastic sleeves. If you are interested in buying this collection, contact W.C. McDaniel at 901-274-7706 or cfmcdaniel@worldnet.att.net for a price [or make an offer].

AFMS NEWSLETTER AWARDS:
New Editor 7th–95 • Junior Article 3rd–98; 8th–03 • Special Pub 4th–03

SFMS NEWSLETTER AWARDS:
New Editor 1st–86 • New Editor 2nd–88, 97 • New Editor (Explorer) 4th–03
Certificate of Excellence–89, 90, 91, 92, 93 • Large Bulletin 1st–87
Small Bulletin 4th–03 • Special Publication 2nd–03 • Art–77, 80, 81, 82, 86 • Junior Article 1st–03
Adult Article–(2th) 89, 90; (3rd) 92; (4th) 85; (5th) 91, 03; (6th) 87; (Hon. Men.) 03

DUES:
Family-$20.00
Single-$16.00
Junior-$8.00
Associate: $13.00

The Memphis Archaeological and Geological Society's main purpose is to promote and advance the knowledge of the Lapidary Sciences in the mining, identification, cutting, polishing and mounting of gems, minerals and fossils to the utmost of our geological and lapidary capabilities.

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MAGS Rockhound News
367 North Main Street
Collierville, TN 38017-2301

MARK YOUR CALENDAR

Board Meeting
March 4

General Meeting
March 12

DMC Field Trip
March 13

M³ Meeting
March 18

MAGS Field Trip
March 27

Rock Show
April 24-25