

THE EARTH SCIENCE NEWS

Volume 59

June 2008

Number 6



EARTH SCIENCE CLUB OF NORTHERN ILLINOIS

-----E S C O N I-----

WWW.ESCONI.ORG

EARTH SCIENCE CLUB OF NORTHERN ILLINOIS 2008

<u>OFFICE</u>	<u>NAME</u>	<u>STREET</u>	<u>TOWN, ZIP</u>	<u>PHONE</u>
President	Jim Fairchild	1144 Siesta Keys	Elgin, 60120	630-497-6278
1st Vice Pres.	Rod Sula	1761 Gary Ave.	Aurora 60505	630-236-9695
2nd Vice Pres.	Irene Broede	2510 S. Forest Ave.	N. Riverside, 60546	708-447-5295
Recording Sec.	Karen Nordquist	6340 Americana #808	Willowbrook, 60527	630-325-8189
Corresp. Sec.	William Vinikour	7729 Knotty Pine Ct.	Woodridge, 60517	630-985-6114
Treasurer	John Good	1891 Windward Lane	Hanover Park,,60133	630-483-2363
Publicity	Don Cronauer	6S180 Cape Road	Naperville, 60540	630-357-6570
Librarian	Andrew Jansen	2 Langford Ct.	Bolingbrook, 60440	630-739-7721
Curator	Randall Bultman	P.O. Box 2262	Joliet, 60434	815-722-0449
Historian	Judy Dedina	11 N. Cumnor Road	Westmont, 60559	630-969-2522
Field Trip	Richard Rock	P. O. Box 726	Wilmington 60481	815-476-7040
Editor	Don Cronauer	6S180 Cape Road	Naperville 60540	630-357 6570
Circulation	Howard Svoboda	17046 W. Bluff Road	Lemont, 60439	630-739-7913
Past Pres.	John Good	1891 Windward Lane	Hanover Park,,60133	630-483-2363
Membership	Eileen Mizerk	2094 Windward Lane	Hanover Park, 60133	630-289-7736
Liaison Rep	John Good	1891 Windward Lane	Hanover Park, 60133	630-483-2363

STUDY GROUP CHAIRS

Archaeology	Bryan Nugent	6621 Westmoreland	Woodridge IL 60517	630 960-5147
Lapidary	Sheila Bergmann	401 S. Lombard Ave.	Lombard, 60148	630-629-5785
Min/Micromt.	Kathy Dedina	11 N. Cumnor Road	Westmont, 60559	630-969-2522
Paleontology	John Good	1891 Windward Lane	Hanover Park, 60133	630-483-2363
Junior	Open			

John Good & Karen Nordquist are delegates to Chicagoland Gems & Minerals Association.
Betsy and Floyd Rogers are Show Chair for 2008

The aim of the **Earth Science Club of Northern Illinois** is to promote an interest in the Earth Sciences. In addition to the regular General Meeting, study group meetings are held monthly. They are held by groups of **ESCONI** members interested in the studies of Archaeology, Mineralogy, Micromounts, Paleontology, and the Lapidary Arts. There are also study sessions for Junior members to help them learn more about the earth sciences. From time to time field trips are arranged. **ESCONI** has a fine library of books on the earth sciences that are available to members.

We welcome the attendance of all interested persons at any or all sessions. The schedule is printed on the back page (date, time and place of meeting). Specific information is published in this bulletin.

Membership is \$20.00 (which includes the Bulletin) for family membership. Dues are payable either at the monthly meetings or by mailing to the **Membership Chair** listed above.

Deadline for Bulletin articles to the editor is the 2nd weekend of each month.

Articles in this publication may be reprinted if full credit is given the author and **The Earth Science News**. Exchange bulletins may be mailed directly to the Editor.

ESCONI website is www.esconi.org
Webmaster is John Good

June 2008**President's Message**

The weather has been great and collecting season is in full swing. Don't forget those buckets of Mazon Creek concretions that were freezing all winter long. If you neglect them too long you may end up with a bucket of mud. I've been occupied splitting some Mazon fossils out in the backyard and have some nice specimens to share with everyone.

Also, how about some dino material? Just got the family booked with Rob Sula and his Paleo Prospectors fossil excavation in Wyoming for June. We hope to find cretaceous ferns as well.



Check out <http://www.paleoprospectors.org/> for info on their trips.

This is the family back in the 90s at our site with Paleo Prospectors in South Dakota.

Join us for our next general meeting as we welcome back Dr. Virginia Naples for a talk about Sabertooth cats. Dr. Naples is always an engaging speaker.

Be sure to visit our ESCONI WEBSITE www.esconi.org for the latest in updates. Also, if you have not already done so, remember to send in your annual dues for 2008 (\$20) to our Membership Chairman.

In our July-August issue of the bulletin, we will print the ESCONI membership list with the name, address, phone number & email addresses for all the members of the club. If you do not want your information published, please send an email to Eileen Mizerk at emizerk@comcast.net requesting we leave your information off the list.

Jim Fairchild, President
jimfairchild@comcast.net

MARCH 2008 ESCONI EVENTS

General Meeting 8:00 PM, Friday June 13 College of DuPage K-131	Dr. Virginia Naples, Northern Illinois University, will present a program on "Saber-tooth Cats." Visitors are welcome; refreshments will be served; parking and admission are free.
Mineral-Micromount 7:30 PM, June 14, 2008 College of DuPage K-131	ESCONI members will discuss gold from Cripple Creek, CO. Visitors are welcome. Refreshments will be served.
Paleontology No Summer meeting	See you in September
Archaeology No Summer meeting	See you in September
Junior No Summer meeting	
ESCONI Field Trips June 21, St. Paul, Indiana	See Web Site, www.esconi.org , for more details
BOARD MEETING No Board Meeting in June	Next Board Meeting is August 22, 2008

See Our Web Site, www.esconi.org, for more details

**Thanks for your help at the
CGMA Show**

ESCONI Outreach

April, 2008



It was a gorgeous spring day! On Sunday, April 20th, Joe Kubal represented ESCONI at "Green is What We Do!" an Earth Day celebration organized by the Forest Preserve District of DuPage County. Held at Fullersburg Woods Nature and Education Center in Oak Brook, Joe exhibited specimens of our state mineral (fluorite) and state fossil (Tully monster), among others. Children of all ages were able to hold and examine a baby mammoth tooth dating back about 13,000 years. Joe also explained the purpose of ESCONI to interested individuals and encouraged them to join our club. The festival

included exhibitors from The Conservation Foundation, The Shedd Aquarium, the U.S. Coast Guard, Water Keepers, etc. There were many Earth Day activities such as "recycling" games, making flower pots and crafts, garlic mustard pulling, composting and much, much more. Our thanks goes out to Ms. Debbi Gayon, Education Site Manager, Office of Education – Fullersburg, Forest Preserve District of DuPage County for allowing ESCONI to participate in this annual event.

ESCONI Gem, Mineral and Fossil Show Demonstrators and Exhibitors

The ESCONI Gem, Mineral and Fossil Show at the College of Dupage on March 15 and 16 co-chaired by Floyd and Betsy Rogers was a great success. Special thanks to the demonstrators and exhibitors who contributed to the show.

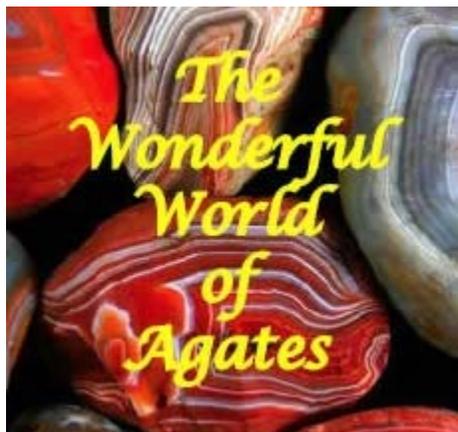
Demonstrators were Lorel Abrell, Sheila Bergmann, Jeanine Milecki, Don Cronauer.

Exhibitors were Lorel Abrell, Archaeology Study Group, Robert Beadle, Larry Bertsch, David and Sheila Bergmann, Max and Alex Briar, Kathy and Judy Dedina, Field Museum, John Good, Todd Hall, Elaine Lord, Jeanine Milecki, Mineral-Micromount Study Group, Richard Rock and Ron Schinderle. I hope I got them all.

Also Contributing was the Student Projects (Posters) from the St. Eugene School, Chicago led by Teacher Barbara Sedivec.

Many thanks to the College of Dupage for the use of their facility.

Agate Show 2008



The Wonderful World of Agates celebrates the world's most beautiful and varied gemstone. This international event will be held July 10-13, 2008, at the University of Wisconsin – Fox Valley in Menasha, Wisconsin. Sponsored by the Weis Earth Science Museum, Wisconsin's official mineralogical museum, the four-day celebration will feature entertaining and educational presentations, displays of some of the finest agate specimens in the world, special activities for families, a silent agate auction, and an international array of dealers selling agate, jasper, petrified wood, and thunderegg specimens, agate fossils and geodes, and agate-related jewelry and art. An area will be reserved for agate books and signings by authors, with some new titles expected to be unveiled at the time of the show. Stanford University historian and agate expert, Dr. Robert Proctor, will present a keynote address on Saturday, July 12, following the banquet. Registration to the event is \$75 per person, which includes all programs, the silent auction and an early-bird visit to vendors. All registrants may attend Dr. Proctor's keynote address, whether or not they attend the banquet.

Due to space restrictions, attendance at the day-long educational seminar and the banquet will be limited, so participants are encouraged to register early.

The organizers of The Wonderful World of Agates envision an event that will bring together agate aficionados and amateurs alike, to celebrate and explore the beauty, science, history and mystique of these remarkable gemstones. The Wonderful World of Agates is the brainchild of Weis Museum Educator Gary Richards, who recognized that Wisconsin, Minnesota and Upper Michigan seem to have an inordinate number of internationally-recognized agateers." For example, Roger Clark from Appleton, Wisconsin, is the author of Fairburn Agate, Gem of South Dakota; Eugene Mueller, owner of The Gem Shop in Cedarburg, Wisconsin, mines agates and jasper at his claims in Mexico and Oregon, and Bob Barron, a scientist at Michigan Technological University's Seaman Mineralogical Museum, extracts agate specimens from bedrock 40 feet beneath the waters of icy Lake Superior.

Please check the website regularly for updates on events, speakers, activities, accommodations, travel information and links to other resources. <http://www.uwfox.uwc.edu/wesm/agate/> UW-Fox Valley is situated in Menasha in the heart of Northeastern Wisconsin's Fox Cities. It is easily accessible from major highways.

Third Annual Ben E. Clement Gem and Mineral Show With Digs

June 7 & 8

Crittenden County High School Rocket Arena

West Elm Street

Marion, Kentucky

Saturday 9AM—5 PM Sunday 11 AM—5 PM

Museum Tours, Field Trips for Fluorite and Fluorescent minerals, Event speakers and dealers.

Lone Star Field Trip Pictures May 10, 2008



St. Paul Indiana Field Trip June 21, 2008

We are scheduling a trip to St. Paul, Indiana for the morning of Saturday June 21, 2008. Check the web site, www.esconi.org for more details. Major collecting sites nearby are St. Leon in Indiana and Maysville, Kentucky which are road cuts which can be collected any time.

Kenosha Dinosaur Discovery Museum

Hatching the Past Through June 15, 2008

Dinosaur Discovery Museum Kenosha Public Museum
5608 Tenth Avenue, Friends Gallery 5500 First Avenue, East Gallery

Hours: Monday, Closed Tuesday through Sunday, Noon to 5pm Closed holidays

This exhibit blends the arts and sciences with an astounding array of authentic fossils collected from all over the world. Touch real dinosaur bones and reconstructed dinosaur nests and experience hands-on exploration stations. See an authentic bowling ball-sized Sauropod egg and the longest dinosaur eggs discovered to date, and dig for eggs. Special DVD presentation of the discovery of "Baby Louie."

The Dinosaur Discovery Museum in Kenosha, Wisconsin is the only museum to exclusively focus on the link between birds and meat-eating dinosaurs, one of the most complete known fossil records. The Carthage Institute of Paleontology is housed in the Museum, and it is dedicated to the preparation and conservation of real dinosaur fossils.

The Kenosha Civil War Museum opens June 14, 2008.



Board Meeting

March 28, 2008

President Jim Fairchild called the meeting to order. First Vice President Rob Sula reported that the speakers for the April General Meeting will be Scott Elrick and John Nelson who will speak on the fossil forest of Danville, Illinois. He is working on the May speaker and has set up Dr. Virginia Naples for June, who will speak on saber toothed cats. Karen Nordquist then presented the report for 2nd Vice President Irene Broede. All of the meetings for April and May have been approved for K-131 except the Mineralogy meeting for Saturday April 12, 2008. It had to be changed to OCC 128 A & B because the power will be out in Building K on that date. COD has not charged us any room rental fees for the month of January because of the inconvenience we experienced in the use of K-161.

Recording Secretary Karen Nordquist then presented the minutes for the February 22, 2008 Board meeting and they were approved as amended. Corresponding Secretary Bill Vinikour said that he e-mailed all the members that he had e-mails for before the ESCONI Show. He did get some thanks for the reminder and did hear from one member in Arizona saying that he wasn't coming. Jim thanked Bill for his generous donation to the ESCONI Show. Treasurer John Good presented a short preliminary report for the Show. We need to look into where the Show will be next year and what weekend to have it.

Historian Judy Dedina had nothing to report. John Good mentioned that Richard Rock has a field trip to Braidwood on May 18. This is the boat trip. John will be doing the geode trip during the MAPS meeting to Jacobs on Saturday April 5. There will be a Braceville trip May 17. Circulation Chairman Howard Svoboda reported that the April Bulletin went out March 18 and he received his copy March 21. Membership Chair Eileen Mizerk reported that we got 12 new memberships at the Show and we had some new members help out at the Show. Liaison John Good said that a Chicagoland meeting was coming up and Karen Nordquist had forms for cases for the Memorial Day weekend show.

Under Old Business, Karen Nordquist reported on Irene Broede's behalf on ESCONI Associates. There were sales at the ESCONI Show and a sale to the UK. In addition, we will be writing up Honorary Memberships.

Under New Business, Rob Sula suggested that we consider a field trip to the Kenosha Dinosaur Museum to visit our friend Tom Carr. It is near Milwaukee and can be combined with a visit to that city's sites.

The meeting was adjourned.

Respectfully submitted, Karen Nordquist, Recording Secretary



General Meeting

April 11, 2008

President Jim Fairchild welcomed everyone. He mentioned the MAPS (Mid America Paleontology Society) Expo in Macomb Illinois where some ESCONI members participated. Next year the theme will be crinoids and it will be April 3-5, 2009. John Good reported that he will need help for the Chicagoland Show Memorial Day weekend. Set up is Friday May 23 from 8 am until lunch. The Des Plaines Valley Geological Society Show is April 12-13. John Catalani said that there is a Braceville field trip May 17 that includes a boat trip. There is a tentative May 10 Lone Star trip he is working on. There is a trip to St. Paul Quarry for the third Saturday in June – June 21. That one has an age limit of 18. There was a suggestion for a field trip to Oxford Ohio to Houston Woods.

Jim Fairchild mentioned that Rob Sula is currently writing a children's' book for National Geographic about his find of a tylosaur. Mineralogy is meeting on the minerals of Romania tomorrow night. Paleontology meets this month on Sharks III. Jim mentioned that Joe Kubal has been doing volunteer activities with scouts on behalf of the club for which we thank him. Rob Sula then presented our guest speakers for the evening from the Illinois State Geological Survey, **Scott Elrick** and **John Nelson** from Champaign, Illinois.

Snapshot in Time – Geological Secrets of the Danville Illinois Fossilized Forest

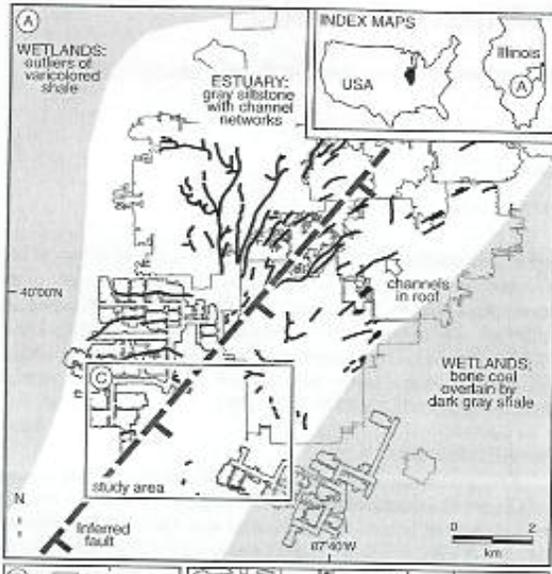


With thanks to Peabody Coal Company, Scott and John described their fascinating work within the Riola and Vermillion Grove coal mines in the Energy Shale near Danville Illinois working with William DiMichele of the Smithsonian and Howard Falcon-Lang of the University of Bristol. They first published their exciting discovery in **Geology** Magazine in 2007 and it made the top 100 scientific discoveries in **Discovery** Magazine. That is how important it is (*pteridosperm* photo by Falcon-Lang is shown above). One thing they hoped to determine from this discovery was information about early forests. Previous theories stated that they were 1) a mix of flora of intermediate species or 2) strong ecologic gradients with less mix and more segregation. This would be the largest examination of an intact fossil forest with 4 square miles – ten times larger than previous studies. They resolved that it was a mix of flora at the local scale with a definite ecological gradient at landscape scale (an entire basin). There had been an earthquake with a dropped fault that had allowed flooding a part of the swamp with tidal sediment over 4-6 months.

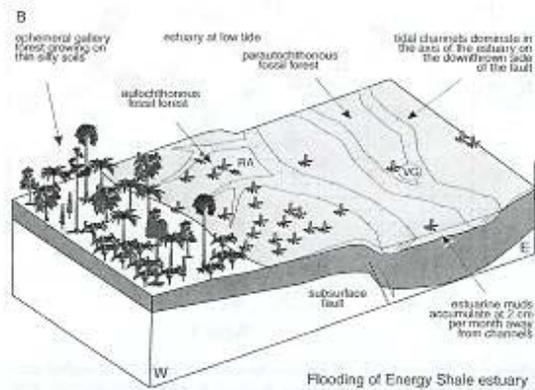
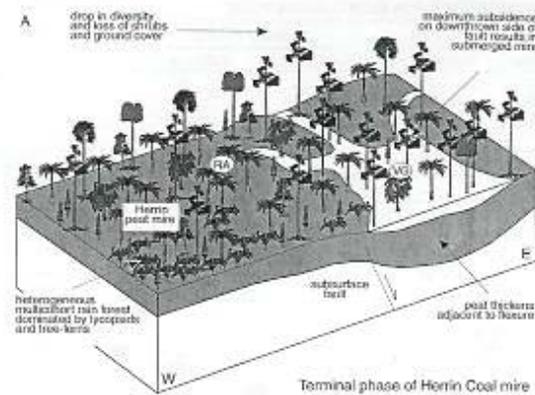
What is coal and how does it form? Coal is carbonaceous organic rock and there are several forms, lignite, bituminous and anthracite. Peat becomes lignite becomes coal with time pressure and heat. You need a wet environment and accumulation must be greater than decomposition. Tropical conditions are best. Peat was protected from dilution by other sediments

GENERAL MEETING—CONTINUED

sediments during the Pennsylvanian 300 MYA. There are about 50 named coals in Illinois. There is enough coal in Illinois to equal the oil reserves in Saudi Arabia and Kuwait together. Too bad it is high in sulfur.



At left above is the map of the area showing the mine and the inferred fault line. The study area is in the box labeled C (map is from the May 2007 article). The drawing below it is also from the article and shows a model of the fossil forest. In A it is at the onset of the subsidence of the fault. In B it is after the abrupt subsidence of the estuarine trough.



They gave us a tour of mining and how the equipment works and showed us how room and pillar mining and long wall mining is done. John gave us a tour of this mine and showed us examples of the fossils found in these mines. Here they found *Calamites* with its jointed stems similar to modern horsetails. They have *Cordaites* (related to modern conifers) with leaf sprays on top. They have *Lycopside* (*Lepidodendron*, etc.) up to 120 feet long and with 6 foot wide trunks. Their diamond shaped trunks were often mistaken for animal skins. They have large spore bearing cones. Some are found upright and some have fallen. They have found seed ferns (*Neuropteris*, etc.) and tree ferns (*Pecopteris*, etc) and ground covers. Quite a variety of most plants known from the time were found here and many were very complete due to the nature of the site.

The sad part of this story is that most of these beautiful fossils can not be saved. They are in the roof of this mine and there is no way to get them out safely and once the coal is removed the mine will be abandoned and it will collapse upon itself and the fossils will be lost. Room and pillar mining removes about 50-55% of the mine and long wall mining removes as much as 85% of the mine. Only photos will be left. Something is wrong with this picture.

GENERAL MEETING—CONTINUED



Scott and John were thanked for their exciting and informative presentation. Further discussion and refreshments were enjoyed by all.

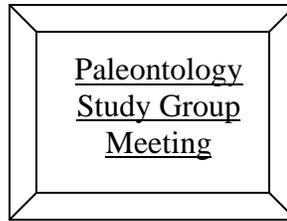
Respectfully Submitted, Karen Nordquist, Recording Secretary

Another Bird from the Era of the Dinosaurs

A new bird fossil has been found in China. It is called *Eoconfuciusornis zhengi* or “the Dawn of the Confucius bird” as described by Kevin Holden Platt for the *National Geographic News*. The age of the fossil bird is estimated as 131 million years, when it became encased in mudstone. It has “modern-looking wings and symmetrically balanced tail feathers.” It was capable of reasonable flight (as opposed to the older *Archaeopteryx* which was likely more awkward flier since it was weighted down with a long bony tail, teeth, and other physical features of a dinosaur).

Taken from Kevin Holden Platt in Beijing, China for [National Geographic News](#)

Cited by Don Cronauer



John Good, Chairman

Date: April 19, 2008

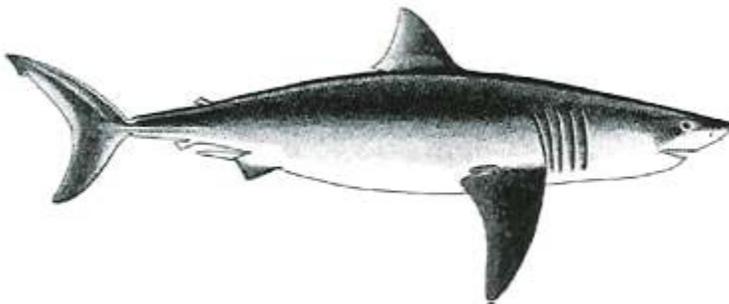
Chairman John Good called the meeting to order and introductions were made by all attendees. John mentioned the MAPS Expo and John Catalani mentioned that it will make a comeback. Rob Sula mentioned that the field trip today to Braceville was good because of all the rain recently. John Catalani mentioned there will be a field trip to Lone Star Quarry on May 10 and he hopes we will be able to get into the South Quarry. He also wanted to see how much interest there was to get into St. Paul Quarry in Indianan. There was interest so he will set it up for June 21. It is the Waldron Shale which is Silurian with trilobites, echinoderms and gastropods. There is an 18 year age limit in Indianan for quarries.



The Paleontology Study Group will do Illinois Stratigraphy in May with Tom Williams. Karen Nordquist had forms for the Chicagoland Show on Memorial Day weekend for cases to display fossils available. Joe Kubal mentioned that we will be involved on August 1 at Pratt Wayne Woods for a mammoth dig with the DuPage County Forest Preserve. Tom Williams then presented the third session on sharks.

Sharks III – The Cenozoic

At the end of the Cretaceous, it was getting higher and drier and the North American Seaway was drying up. The sharks and fish were not affected by the K/T as much as some of the other animals because they could go deep into the water when times got tough. North America was mountain building, India was moving toward Asia, the Tethys Sea was becoming smaller, and the climate was changing. In the North it was becoming colder. At the end of the Cretaceous the modern types of sharks were becoming established. In the Miocene we saw the largest sharks – up to 40 feet long. Many of the modern forms appear – bamboo, angel sand tiger, mackerel, etc. One of the largest was the great white pictured at left. The advanced species like the Mako shark go as far back as the Cretaceous with the short fin and the long fin species. They have broader more compressed teeth and crushing teeth as well as slicing teeth.

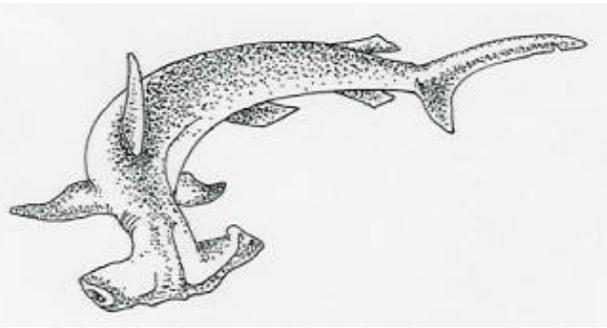


They have high activity levels with a body temperature 7 to 10 degrees above the water temperature. The Mako shark can travel up to 40 mph so that it can catch the fast teleost fish. It can break the back of its prey to cripple them.

Paleontology Study Group Meeting, Continued

Another interesting shark is the hammerhead shark that doesn't have real big teeth but they are sharp. They cluster in groups. Their unusual head has electrical sensors that act like sonar.

Tiger sharks reproduce in large numbers and eat anything – even license plates, which have been found inside them. They grow up to 20 feet in length.



The Chesapeake Bay deposit in Delaware, Maryland and Virginia is an excellent site as it was an alternating marine transgression in the Eocene Miocene. Many sharks are found there. There are also some great fossils of Eagle rays from the Green River that are in Lance Grande's book.

Several members brought fossils to share. Below are some of them.



Tom William's shark teeth



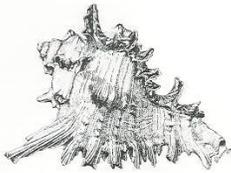
Rob Sula's shark teeth

References:

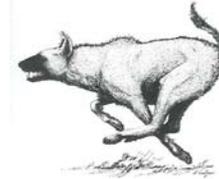
"Fossil Sharks of Chesapeake Bay Region" by Bretton W. Kent
"Megalodon, Hunting the Hunter" by Mark Renz

The meeting was adjourned for refreshments and further discussion about these fascinating creatures of the deep.

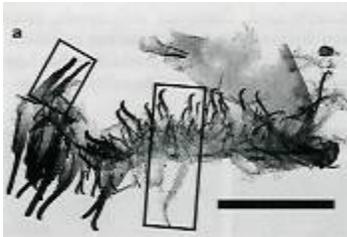
Respectfully submitted, Karen Nordquist, Secretary



Karen's Komments



Sophisticated Feeding in Cambrian Crustacean from Mount Cap



Most Cambrian arthropods used very simple feeding mechanisms with only very simple appendages. It was only in the post Cambrian that the feeding appendages became more diversified and specialized. Fossils have been found from the late Early Cambrian (515-510 MYA) Mount Cap Formation in the North-west Territories of Canada where this arthropod has been found that is about several centimeters long with spines and setae (an

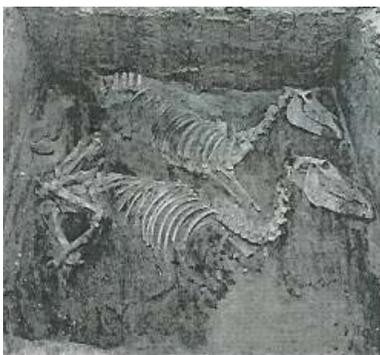


example is shown above left). Some setae are robust and some are hooked or clubbed with saw toothed morphologies. These can be used for scraping and filtering fine particulate food. In addition there are many cuticular elements found like the one at the left that have spines along the margin many with short spines alternating with taller spines. They are similar to tail flaps and to terminal walking appendages seen in other arthropods. A second type of elements found is represented by single-



walled tapering structures with distinctive fringed margins. On some they are formed by palmate cuticular scales that lengthen progressively to form one of the margins to form the fringe as seen in the photo above. This type of structure is found on the molar surfaces of mandibles of extant crustaceans – the grinding surfaces. If this were all reassembled, it is a complex feeding apparatus with the food particles being scraped from a surface using appendage parts with sawtooth edges and hooks. They are then further processed with the mandibular molar plates before being passed into the animals. (Harvey & Butterfield in **Nature** Vol. 452 4/17/2008)

The Domestication of the Donkey



Findings in an early pharaonic mortuary complex at Abydos, Middle Egypt has provided some interesting clues to help in determining when the donkey was domesticated. Researchers have used skeletons of ten 5,000 year old asses carefully buried at this site along with a study of 53 modern donkey and African wild ass skeletons to try to pinpoint the timing. Donkeys are uncommon in the fossil record so it has been difficult. Donkeys are tough desert-adapted animals and can carry heavy loads. The African wild ass, *Equus africanus* is the wild ancestor of the donkey and they were also hunted by the Egyptians. There are depictions of wild ass hunts from King

Tut's tomb for example. As they became domesticated they became smaller and that was how you could tell the difference from the larger wild ones.

Karens Komments, Continued

The donkeys at this site were buried in three neighboring grave chambers adjacent to the cult enclosure of one of the earliest kings at the site. They were in sealed tombs with graves similar to those for humans. They were all on their left sides facing southeast. Five of them were missing heads, possible the result of grave robbers. They were all prime adults between 8 and 13 years old and all were males. Many had posttraumatic response to microfractures in the vertebrae from overloading and strain. Seven of them showed compression of neural spines probably from being ridden. The joints of the skeletons all showed heavy wear but it was evenly distributed. Their study showed that the ancestor is the shorter Nubian wild ass based on the analysis of the measurements they did. Among the measurements they did were modern wild ass skeletons at the Field Museum here in Chicago. This Egyptian site helped to show that by that time the donkeys had been domesticated to the point that they were a valued part of the royal household and were buried with respect after years of service. (Rossel et al in **PNAS** Vol. 105/10)

Bones of Small Humans Found in Caves of Palau



While vacationing, Lee Berger a paleoanthropologist of South Africa discovered bones in caves east of the Philippines in 2006. They were very small and have been dated to 900 and 2,900 years ago. The older bones are very small and exhibit primitive or archaic human characteristics. Many of the bones in the cave have been dislodged by wave action and many are still buried in the sandy floor (photo left shows one of the skulls still embedded in the flowstone). Some more recent finds were made near the entrance to the cave and are more normal in size. The smaller ones found deeper in the cave are 3 to 4 feet in height and probably weighed about 70 to 90 pounds. They were smaller than the people found in Flores (the hobbits – *Homo floresiensis*). The estimated brain size of these small people is about twice that of the hobbit. They appear to be *Homo sapiens*. However, some of them appear to lack chins, have large teeth and small eye sockets and deep jaws. Some believe that this may be due to island dwarfism. Palau does

not have mammals and large reptiles as food sources. Fishing was not a local activity until bigger bones appear some 1,700 years ago when they appear in the cave. A combination of limited diet, lack of predators, warm climate, small population, and genetic isolation could have produced this population. Others are still arguing that the hobbit is a distinct species. More work will be done on the other parts of these skeletons as well. Another researcher on an island north of Palau, Orrak, has found a number of juvenile bones and believes that it may have been a custom to bury children together. The sites on Palau have been looted for years and it is causing some friction with the natives also. National Geographic has been involved with the excavation of both projects and plans to air a movie on it. (Berger et al in **PLoS ONE** Vol. 3 e1780, 2008)

Karen Nordquist, Paleontology

MINERALOGY/MICROMOUNT April 12, 2008

Upon arrival at COD we found Building K to be without power. We had to use a room in another building, and did not have an internet connection. The meeting was called to order at 7:40 PM by Kathy Dedina. John Good spoke about scheduled field trips for 2008, including a trip to Braceville on May 17. Assignments for the May meeting on the minerals and geology of Morocco were made Minerals- Jim Daly, History and geology- Kathy Dedina Fossils- John Good.

This month's program was on Romania. Kathy Dedina gave a presentation on the subject, which will be printed separately. Kathy and Judy Dedina and Jim Daly showed specimens from Romania. We had a small silent auction of material from Jean Reynolds. More will be auctioned next month Jim Daly had another batch of micromounts from the Harry Dryer collection for sale. Refreshments were provided by Kathy Dedina.

Submitted by Jim Daly.

Romanian Minerals

Romania is located in Eastern Europe bound by Hungary, Ukraine, Moldova, Yugoslavia, Bulgaria and the Black Sea. It is approximately the size of Oregon with a population of 22 million.

Romania has a very ancient history dating to the time before the Romans. The area was then known as Dacia. Early Greek references document an awareness of the mineral wealth of Dacia which included gold, silver, copper and salt. Gold and silver artifacts date to the 4th and 3rd century B.C. A recent find of gold bracelets dates to the 1st century B.C. The Roman conquest of Dacia in 106 A.D. protected the frontier and made possible the exploitation of the Dacian gold mines. It is estimated that 150,000 kgs. of gold was mined by the Romans. The Rosia Montana mine was the largest Roman gold mine in the world. This gold may have helped finance the expansion of the Roman Empire. The importation of workers from the Roman Empire to the gold mines explains how Romania got the current name. Roman mine workings and artifacts have been found in several places in Romania including Rosia Montana then known as Alburnus Maior, Bucium and Turda(salt).

In the Middle Ages German miners worked in the area. The Austrian-Hungarian Empire controlled the area from the late 1600's to the end of World War I. This shifting of control has resulted in mines and mining areas having Romanian, Hungarian and German names. The world famous gold mining area of Rosia Montana is called Verespatak in Hungarian and Goldbach in German. Frequently the Romanian and Hungarian names are listed together.

Romanian geology is complex. It is dominated by the Carpathian Mountains which formed when the Indian, African and smaller plates and fragments collided with the Eurasian plate. The process closed part of the Tethys Sea and formed mountains from Europe to India. The process began in the Cretaceous and lasted to the Miocene. The Southern and Eastern Carpathians and the Apuseni Mts form a bow shaped range. Not all parts of the Carpathians were geologically active all the time and formed from the same basement rocks. The Carpathians are built from several plates each of which had a unique grouping of Precambrian to Paleozoic rocks which had been subjected to tectonic forces. These plates are subjected to forces of convergence and subduction during the orogeny. Volcanic and magmatic events which are taking place in the Carpathians influence the deposition of minerals.

Romanian Minerals- Continued

Several areas are of special interest to mineral collectors. The Maramures mining district in Northern Romania is an area of 25 epithermal vein ore deposits with lead, zinc, copper and gold. It has been mined since the 12th century. It is estimated that 4 million ounces of gold have been extracted from the area. Significant specimens have come from mines in the district in recent year. Important specimen sources in the area include the Baia Sprie, Herja, Boldout, and Cavnice Mines. The Golden Quadrilateral in the Apuseni Mts. in Western Transylvania has been a historic gold producing area for over 2000 years. Recently copper deposits have been mined. Miocene volcanic activity is responsible for the deposits. The Rosia Montana area, the Brad area and Bucium had numerous small gold workings since Roman times. Rosia Montana had 15% visible gold unlike most Romanian gold producing areas. The Banat area in south-western Romania shows evidence of volcanic and intrusive activity. The area was worked for iron or for polymetals including copper.

Mining in Romania is undergoing many changes as a result of joining the European Union. The industry was known for its poor management, bloated workforce and poor environmental record. Government subsidies in metal mining were phased out in 2007. Only profitable mines could stay open. This resulted in the closure by 2005 of 520 of 650 mines operating in 1997. Only 36 mines and 3 quarries are left in metal mining in 2005. The workforce decreased from 175,000 in 1997 to 57,000 in 2005. Romania produces copper, lead, zinc, iron, silver, gold, salt and industrial minerals with decreasing production in some sectors. As of March of 2008, the Rosia Montana gold project which would use cyanide leaching is on hold pending final governmental approval. In 2000, Romania had 2 spills which resulted in massive fish kills in rivers. The opposition to the Rosia Montana project includes environmental and archaeological groups, the Hungarian government and George Soros and his foundation. There are other gold explorations and proposals under consideration in other areas.

The Geological Institute of Romania lists 600 minerals as occurring in the country. Mindat on the Web lists 268 minerals including 32 type localities and over 90 locations. Gold specimens are the most highly prized. Gold forms in the isometric system as octahedrons, dodecahedrons or cubes. Most gold is finely disseminated and not visible. Visible gold is found as crystals, leaf and sheets, needles, dendrites and wires. Gold crystals up to 1.2cm occur in various forms. Leaf and sheet gold reaches 20cm. Nuggets from placer gold were found in rivers. Several areas are known for gold but the Rosia Montana area is world famous. The Mineralogical Record Volume 13 number 6 (Gold Issue) features photos of Romanian gold mostly from Rosia Montana in the European gold section and on the cover. The magazine also states that no new specimens have come on the market recently. Older specimens in collections are now more highly prized. A mineral museum in the Brad has a collection of gold from the area.

Stibnite (antimony trisulfide) occurs as dark grey to black orthorhombic crystals often in radiating groups. From Maramures Co. it is notable for its beautiful crystals and aggregate forms with variations by mine. Crystals from the Baia Sprie Mine form long needles up to 20 cm in length while those from the Herja take a prismatic form up to 6 cm. long in star like groups. Those from the Baiut Mine are shorter prismatic crystals with terminations. Stibnite also occurs on quartz and associated with barite.

Romanian Minerals- Continued

Quartz(silicon dioxide) is a common mineral found in many areas in a variety of forms from clear crystals to agates. Quartz forms hexagonal crystals often with prismatic faces. Quartz may be transparent or cloudy. Twins and scepters are prized forms. Some amethyst is found. Quartz is associated with other minerals notably dolomite, calcite, siderite and jamesonite. Jamesonite is also included in the quartz.

Calcite (calcium carbonate) is a common mineral that occurs in some exceptional forms. Calcite forms in the hexagonal system in clear, white or colored crystals. Romanian calcite occurs in numerous locations. Calcite from the mines of Maramures Co. is noted for forming spheres or balls up to 10 cm. Spheres are usually white or clear. Some are blackened or grayed with the inclusion of jamesonite. Rarer still are the half black and half white specimens. Calcite crystals occur in association with pyrite, marcasite, tetrahedrite, dolomite, quartz and siderite. Dolomite and siderite replace calcite forming pseudomorphs.

Siderite(iron carbonate) forms in the hexagonal system as rhombohedrons, less commonly as scalenohedrons and as reniform masses. It is another common mineral that is part of ore bodies in same places. It is typically a brownish color. Siderite in the Maramures Co. mines occurs as crystals and as a replacement of calcite crystals forming pseudomorphs.

Dolomite(calcium, magnesium carbonate) is in the hexagonal system usually crystallizing as curved rhombohedrons. Dolomite is found in many locations. It occurs in the Maramures Co. area as crystals and as a replacement of calcite. It is associated with calcite and quartz

Rhodocrosite(manganese carbonate) is in the hexagonal crystal system usually as rhombohedrons but is also forms masses. Shades of rose or pink are the usual color. It was first studied from material from Cavnic. Good crystals are rarer than the massive forms.

Jamesonite (lead, iron and antimony sulfide) forms in the monoclinic system as needles in fibrous or compact masses and as inclusions within quartz and calcite. Fine needlelike inclusions give the host material a grey or blackish color which is the color of the Jamesonite.

Other minerals of interest are sphalerite, galena, barite, ferberite, pyrite and chalcopyrite. Tellurium, gold and rare earth minerals are interesting but not usually collector's specimens. The same is true of many cave minerals and the salt found in Romania. The quantity of mineral specimens coming out of Romania will probably decrease as mining areas are closed and miners leave for other jobs.

Submitted by Kathy Dedina

June 14, 2008 Mineral Study Group Meeting will be on Gold From Cripple Creek, CO.

September 2008 Mineral Study Group Meeting will be Show and Tell including a video.

February 23rd Archaeology Meeting

Members brought in their Indian Artifacts (bowls, pestle, arrow points, axes, salt sticks, etc.) for the Archaeology display case for the upcoming March Gem, Mineral and Fossil Show. Excellent examples and informative discussion led to a great time for all as we planned the layout of our display case.

Next Month's Meeting will continue our discussion of the Mississippian period by John Good.

For February, Sheila Bergmann presented the Woodland period (1000 BC to 1000 AD) and continued into the Mississippian period. She explained that gardening gained more importance during the Woodland period, although gathering plants and hunting wild game were still prevalent. Squash, sunflowers, maygrass, knotweed and lamb quarters were valued for their highly nutritious seeds which were used to make flour and porridge.

People began to live in small communities and developed pottery which provided new ways to cook and store food. They expressed their spiritual beliefs by honoring their dead by burying them in mounds. They developed many talented craftsmen and expanded their trade networks. They also developed the bow and arrow which improved their hunting skills.

Here are brief highlights from the start and near the end of Sheila's presentation:

By 200 BC, the Hopewell Culture produced large earthworks, stratified society and agriculture. They occupied the areas between the Ohio and Illinois rivers across much of the Midwest and East. They structured mounds in geometric and animal shapes to surround and protect their religious and ceremonial center.

By 900 AD, the Anasazi community occupied Chaco Canyon, New Mexico. It became the center for a turquoise-based economy. They traded turquoise for marine shells from the Gulf of California, for turkeys and parrots from Mexico and for ores, minerals and metals from the Rocky Mountains. The Anasazi were superbly talented making all sorts of useful, highly decorative pots, pins, necklaces and yucca-fibered baskets.

References

The North American Indian by Carl Waldman

Submitted by Bryan Nugent

March 22nd Archaeology Meeting

For next month's meeting, Bryan Nugent will discuss Dickson Mounds.

Bryan started out the March meeting with this question: What do the following have to do with the Mississippian Period? **Answers appear at the top of page 16**

Mississippi River; European Contact; Rich and Poor Chiefs; Writing System; and Maize

March 22nd Archaeology Meeting - Continued

Answers for Questions from Page 15

Mississippi River - Besides being the 2nd longest river in the US, the Mississippian Culture was named from it.

European Contact – Mississippian period almost entirely predates European contact.

Rich and Poor – Mississippian period institutionalized social inequalities.

Writing System – There wasn't one during the Mississippian period.

Maize - Had an intensive corn agriculture

John Good gave a presentation using the web:

Originally the Mississippian period was considered different from the Woodland. They had larger population, established towns and governments. Other points were: Built large flat topped mounds to display special buildings, Had powerful chiefs and religious priests. Intensive agriculture: corn, beans and squash. Highly efficient with the bow and arrow. Excellent craftsman using clay, shell and stone, Advanced pottery technology using tempering agent

First, although certain ceramic forms and tempering agents and rectangularly shaped structures are still considered indicators of Mississippian period sites, there now appears to be nothing dramatically new in the way Mississippian cultures lived as opposed to the previous Woodland cultures. Walthall (1990) has divided Mississippian cultural chronology into Early Mississippian (A.D. 900 - A.D. 1200), Middle Mississippian (A.D. 1200 - A.D. 1500), and Late Mississippian (A.D. 1500 - A.D. 1700). Mississippian sites appeared almost simultaneously throughout the Southeast ca. A.D. 900 and were mainly located within river floodplain environments.

It is now generally believed that a form of chiefdom government operated within the Mississippian period. These chiefdoms, operating out of temple mound complexes, such as Moundville or Etowah, apparently controlled specific territories usually associated with a defined floodplain environment. Chiefs were responsible for the redistribution of food between outlying communities and the major community. Whether these chiefs were able to control exchanges of goods within their territory and with other chiefdoms, employ full-time artisans and specialists, or function as both the religious and political head, are questions requiring more research.

In all probability, Mississippian chiefdoms controlled only small geographical areas and were in constant states of change because their power rested on fragile agricultural adaptations. Failure of crops due to weather or other natural forces would have imperiled population stability in the chiefdom. In the past, much was made of the idea of a "Southern Cult" or pan-Mississippian religious phenomenon, based on the finding of similar iconography on artifacts of shell, copper, and ceramic from high-status burials in large Southeastern temple mound centers. It is now realized that postulating a religion on the basis of similar types of burial artifacts may be an erroneous assumption. More likely, similarity in exotic artifacts was due to a Mississippian exchange network linking hundreds of large and small communities, which functioned to promote the exchange of prestige goods for food. A similar exchange system probably functioned in the Middle Woodland period and similarly accounted for the exchange of exotic goods that were similar in appearance from site to site.

Web Sites Used:

<http://www.mississippian-artifacts.com/>

<http://www.nps.gov/history/nr/travel/mounds/builders.htm>

<http://mcclungmuseum.utk.edu/permex/archaeol/xrm-text.htm>

Submitted by John Good and Bryan Nugent

Local Calendar of Events

BURPEE MUSEUM EVENTS

2008 Family Fossil Field Trips: Join us on a fossil-hunting field trip! Enjoy a day prospecting for fossils in a local quarry with Burpee Museum paleontologists. You get to keep what you find. All ages and skill levels welcome.

All Family Fossil Field Trips (FFFT) are on Saturdays from 1:00-4:00pm

COST: \$8/members \$12/non-members

Pre-payment is required. We will send you directions and site specific information about one week before the FFFT you register for.

Sat, June 21 will be at Stateline Quarry in S. Beloit, IL

Sat, July 12; Sat, Aug 23; Sat, Sept 6; and Sat, Sept 20 are TBA.

LIZZADRO

June 21 "Geode Collecting Field Trip"

Collect geodes near the Mississippi River in Illinois. A hilltop quarry yields abundant and fascinating geodes. A geode cracker will be on hand to open geodes in the quarry. Other minerals and fossils are available to collect. Trip fees include tour guides, collecting fee and motor coach.

Field Trip - Ages 8 yrs. to Adult - 7 a.m. to 9 p.m.

Fee: \$98.00 per person Reservations Required: (630) 833-1616

Special Exhibit " American Lapidary" June 10 to August 31, 2008

Features hardstone carvings and faceted stones by American artists including lapidary hobbyists and professionals.

33rd Annual Upper Peninsula Gem and Mineral Show Ishpeming Rock and Mineral Club

Ishpeming Elks Club Hall

597 Lake Shore Drive

Ishpeming, Michigan

Free Admission

August 1 Field Trips to Local Quarries for micromount. Hard Hat and Goggles required.

August 2 - Show with demonstrations, display, dealers and silent auction

9:30 a.m. to 4:30 p.m. (All times are Eastern Daylight Savings Time)

August 3 - Field Trip to Lindberg Quarry for Kona Dolomite. Hard Hat and Goggles required.

Copper Country Mineral Retreat August 3 to 10, 2008 Houghton, Michigan A Week of Mineral Collecting and More

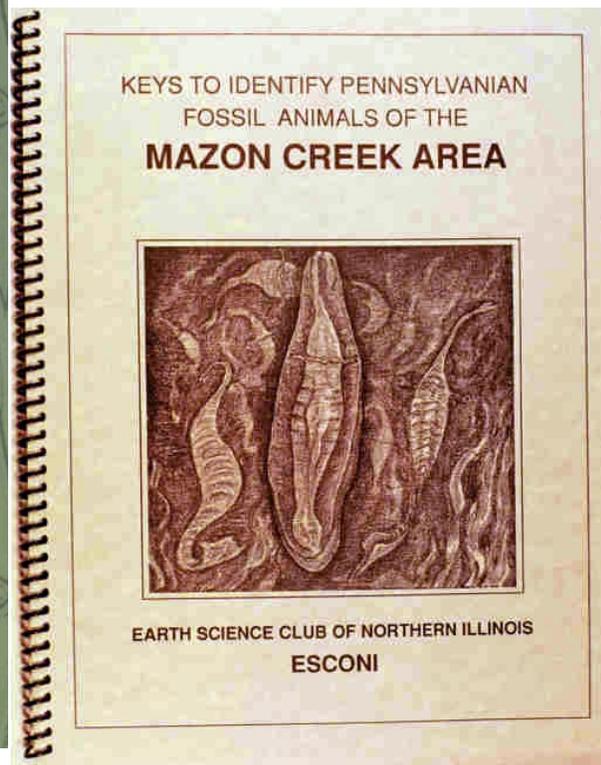
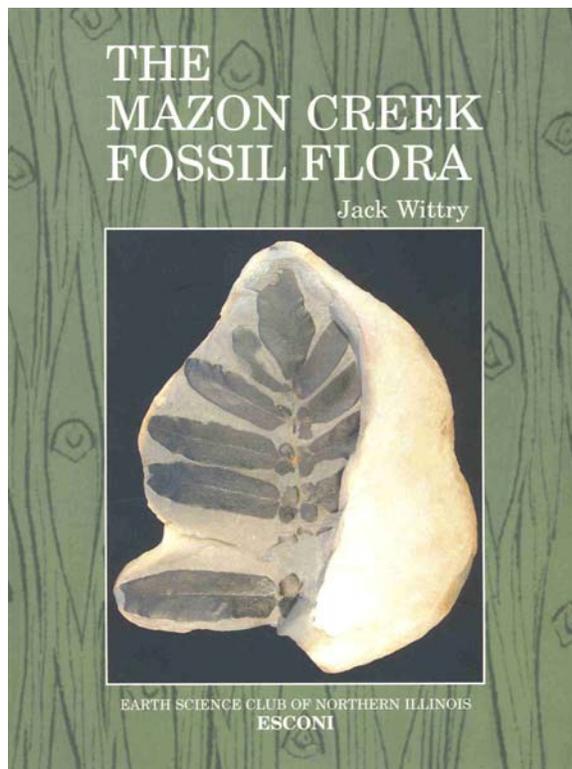
Prepared surface collecting, photography workshop, underground collecting, mineral banquet & auctions, brag session and social speakers

Check here for more details http://www.museum.mtu.edu/copper_country_mineral/index.html

THE FACETER'S ARE COMING!

The Midwest Faceter's Guild will be holding their 20th annual Faceters Seminar on August 15, 16 & 17th at Elmhurst College in Elmhurst, Illinois. The WSLC will be assisting the Guild in organizing the classes, with accommodations, and events surrounding the seminar, including the banquet that will be held on Saturday night. Classes will be available for beginner, intermediate and advanced. Those taking the advanced classes will be required to bring their own faceting machine. The classes are very reasonably priced and are a great way to test out the hobby to see if it is for you prior to buying expensive equipment or taking expensive classes. A detailed brochure and more information will be forthcoming. Their website is: www.midwestfacetersguild.org

ESCONI Books



The Mazon Creek Fossil Flora by Jack Wittry
 313 color pictures, 113 taxa, 145 drawings
 \$65 hard covers for ESCONI Members
 \$35 soft and \$6 to ship
 Make check out to
 ESCONI Associates

**Keys to Identify Pennsylvanian Fossil Animal
 of the Mazon Creek Area**
 125 Pages, 212 Black and White Drawings
 \$12.00, \$5 to Ship

Andrew Jansen
 2 Langford Ct.
 Bolingbrook, 60440
 630-739-7721
esconibooks@aol.com

2008 ESCONI CALENDAR

Revised 12/02/07

GROUP	GENR'L MGTS.	MICRO Mineral	PALEO	ARCH	BOARD	JUNIOR
January	11	12	19	26	25	
February	8	9	16	23	22	
March	15-16 SHOW	8	X	22	28	
April	11	12	19	26	25	
May	9	10	17	X	30	
June	13	14	X	X	X	
July	X	X	X	X	X	
August	X	X	X	X	22	
September	12	13	20	27	26	
October	10 ?	11	18	25	24	
November	14	8	15	22	X	
December	7 HOLIDAY	6	X	X	X	
DAY	2nd FRI	2nd SAT	3rd SAT	4th SAT	4th FRI	2nd FRI
TIME	8:00	7:30	7:30	7:30	7:30	7:00

Dates are subject to change: see Bulletin.

College of DuPage (COD) Building K, Room #161 for most meetings, but note that the room number is subject to change – there will be a note posted on the entrance door.

ESCONI Show March 15-16 in **Commons Room** of Building K.

The Flea Market is under consideration.

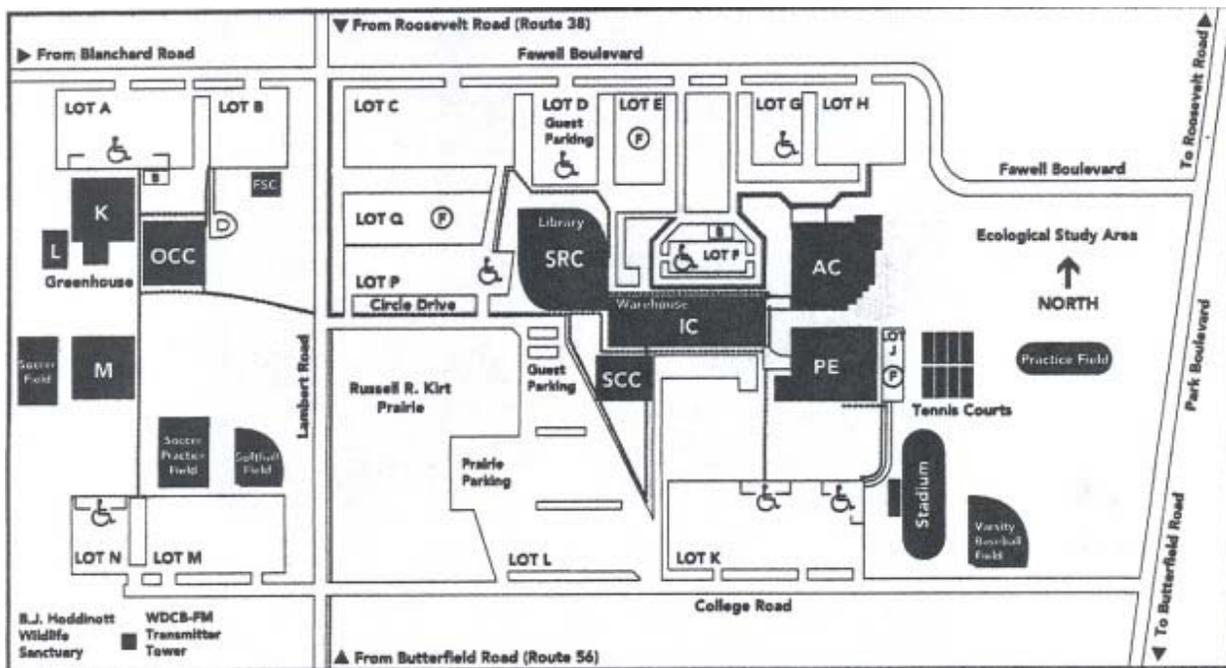
No scheduled meetings for Lapidary; contact Don Cronauer for information. (Lapidary may meet in Room #162, Arts Center if there is sufficient interest)

**EARTH SCIENCE CLUB OF NORTHERN ILLINOIS
BOX 321
DOWNERS GROVE, ILLINOIS 60515**

DATED MATERIAL!

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 114
DOWNERS GROVE
IL 60515

E.S.C.O.N.I. Meetings Held In Building K Room 131



**SEND EXCHANGE BULLETINS TO
Don Cronauer; 6S180 Cape Road; Naperville, IL 60540**