

# ***Newsletter of the*** **KENTUCKY** **PALEONTOLOGICAL** **SOCIETY**

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September 2009

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## **AUGUST MEETING**

Dr. Steve Greb gave an excellent presentation on Carboniferous animals from Kentucky and elsewhere at our August meeting. Many thanks to Steve for his great lecture.

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## **SEPTEMBER MEETING: ORDOVICIAN AND DEVONIAN INVASIVE SPECIES**

The KPS will meet at 7:30 PM on Friday, September 25 on the first floor of the Mining and Minerals Resources Building on the University of Kentucky campus (see meeting announcement for more details).

This month our speaker will be Dr. Alycia L. Stigall from the Department of Geological Sciences and Ohio Center for Ecology and Evolutionary Studies at Ohio University. Alycia will speak on "Tracking species through space and time: The impact of invasive species during the Late Devonian Mass Extinction and Late Ordovician Richmondian Invasion."

Alycia's research focuses understanding how changes in the biogeographic distributions of species contributes to changes in ecology and evolution (specifically extinction and speciation). She is particularly interested in the long-term (1000's of years) effects of invasive species—something we can only learn from the fossil record. Alycia's research in paleobiogeography has centered on the Devonian of North America and the Late Ordovician of the Cincinnati Arch. Her KPS talk will discuss the impact of invasive species in both the Late Devonian Mass Extinction and the Late Ordovician Richmondian Invasion. Alycia is also an expert in crustacean paleobiology, specifically phyllocarids and conchostracans. As part of this work, she's conducted fieldwork in Antarctica and worked on fossils from as far away as Madagascar. Her website is: <http://oak.cats.ohiou.edu/~stigall/>

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## **SEPTEMBER FIELD TRIP – FALLS FOSSIL FESTIVAL**

The Falls of the Ohio State Park and the Falls of the Ohio Foundation announce the **2009 Falls Fossil Festival**. The event will be held September 19 - 20 at one of the world's most spectacular naturally exposed fossil beds. Visitors are encouraged to *explore* the rich Middle Devonian patch reef packed with fossils on the riverbed at the Falls of the Ohio. Look for giant colonial corals, horn corals up to four feet long, trilobites, and numerous other

types of marine organisms.

This show, held rain or shine, features outdoor vendors selling fossils, minerals, books, items with a geoscience theme and food. There are fossil bed tours and special programs from knowledgeable paleontologists and geologists in the Interpretive Center. Speakers and topics this year include:

### **Saturday, September 19**

1:30 **Carboniferous Fossils and Earth History**, Dan Phelps, KPS.

2:30 **Life in the Ordovician**, Dr. Kate Bulinski, Bellarmine University.

3:30 **Minerals from the depths of the Earth**, Dr. George Lager, University of Louisville.

4:30 **Keynote Presentation – History of Plants**, Dr. David W. Taylor, Indiana University Southeast.

### **Sunday, September 20**

2:30 **Fossil Collecting Tips**, Rick Schrantz, KPS.

3:30 **Mineral Collecting Tips**, Steve Garza, Corydon, Indiana.

The temporary exhibit – "*Green Planet: The History of Plants*" developed by paleobotanist Dr. David Taylor may be seen in our Interpretive Center. It explores the history of plants and how they have evolved. Look for many examples of fossil plants on display from important sites around the world.

Collecting is prohibited at the Falls of the Ohio; however, a local quarry donates 30 tons each of fossil-bearing Silurian Waldron shale and Devonian Jeffersonville Limestone residuum. Dig for brachiopods, bryozoans, corals, crinoids, cystoids, snails, clams, and trilobites in Hanson's *Fossil Collecting Piles*. A mineral collecting pile from the Hastie's mill dump in Rosiclare, Illinois will also be available.

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## **GEM AND MINERAL SHOW**

Rockhounds of Central Kentucky is having their annual show on October 3<sup>rd</sup> (10 AM to 6 PM) and 4<sup>th</sup> (Noon – 5 PM) at the Kentucky National Guard Armory in Lexington. The Armory is located on Airport Road, off Man O' War, behind Bluegrass Field.

Admission is \$1 for adults, 50 cents for children 6 –12. Parking is free.

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## **KGS OPEN HOUSE – EARTH SCIENCE WEEK**

The Kentucky Geological Survey is having its annual Earth Science Week Open House on the evening of Wednesday, October 7, 6:00 to 8:00 PM. The event will be in the Mines and Minerals Building on the University of Kentucky Campus (the same place the KPS meets at). Free parking is available.

This is always a great event to see fossil, rock mineral, and geology exhibits. Several KPS members will have displays at the event, which is geared to both adults and school-age children.

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## **RECOVERY OF AMMONOIDS AFTER PERMIAN EXTINCTION**

After the End-Permian extinction 252.6 million years ago, ammonoids diversified and recovered 10 to 30 times faster than previous estimates. The surprising discovery raises questions about paleontologists' understanding of the functioning of the biosphere after a mass extinction.

The history of life on Earth has been punctuated by a number of mass extinctions, brief periods of extreme loss of biodiversity. These extinctions are followed by phases during which surviving species recover and diversify. The End-Permian extinction, which took place between the Permian and Triassic, is the greatest mass extinction on record, resulting in the loss of 90% of existing species. It is associated with intensive volcanic activity in China and Siberia. It marks the boundary between the Paleozoic and Mesozoic Eras. Until now, studies had shown that the biosphere took between 10 and 30 million years to recover the levels of biodiversity seen before the extinction.

The team of paleontologists has shown that ammonoids needed only one million years after the End-Permian extinction to diversify to the same levels as before. The cephalopods, which were abundant during the Permian, narrowly missed being eradicated during the extinction: only two or three species survived and a single species seems to have been the basis for the extraordinary diversification of the group after the extinction. It took researchers seven years to gather new fossils and analyze databases in order to determine the rate of diversification of the ammonoids. In all, 860 genera from 77 regions around the world were recorded at 25 successive time intervals from the Late Carboniferous to the Late Triassic, a period of over 100 million years.

The discovery of this explosive growth over a million years takes a heated debate in a new direction. Indeed, it suggests that earlier estimates for the End-Permian extinction were based on truncated data and imprecise or incorrect dating. Furthermore, the duration for estimated recovery after other lesser extinctions all vary between 5 and 15 million years. The result obtained here suggests that these estimates should probably be revised downwards. The biosphere is most likely headed towards a sixth mass extinction, and this discovery reminds us that the recovery of existing species after an extinction is a very long process, taking several tens of thousands of human generations at the very least.

Journal Reference: Brayard A., Escarguel G., Bucher H., Monnet C., Brühwiler T., Goudemand N., Galfetti T. and Guex J. **Good Genes and Good Luck: Ammonoid Diversity and the End-Permian Mass Extinction.** *Science*, 2009; 325 (5944)

Adapted from a Science Daily Press Release.

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### DINOSAUR TRAIN ON PBS

Check listings for your local PBS channel for times. See: <http://pbskids.org/dinosaurtrain/>

On the website, you can watch two full episodes and the final comments of a paleontologist.

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### FACEBOOK

The Kentucky Paleontological Society now has a Facebook page. Presently, we have 82 members on the page. If you are on Facebook you can join and get updates about KPS activities.

To join, create a Facebook account at: <http://www.facebook.com> and search for "Kentucky Paleontological Society."

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### MEETING DATES FOR 2009

The KPS will meet the following Fridays in 2009; September 25, Dr. Alycia L. Stigall; October 30, Dr. Frank Ettensohn; November 20, Open; December 18, annual election, party and auction.

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### SEPTEMBER FIELD TRIP ANNOUNCEMENT

**WHAT:** Visit the Falls of the Ohio Fossil Festival

**WHERE:** Clarksville, Indiana, Meet at the Museum.

**WHEN:** Saturday, September 19 and 20, see times above

**ITEMS YOU MAY NEED:**

Shoes and clothing that can get dirty or wet  
Camera (no collecting at the Falls, but piles of material are brought in from local quarries)

*Everyone please remember to think of safety!*

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### SEPTEMBER MEETING ANNOUNCEMENT

**WHEN** - Friday, September 25, 7:30 PM.

**WHERE** - Mines and Minerals Resources Building, Room 101, next to the Faculty Club

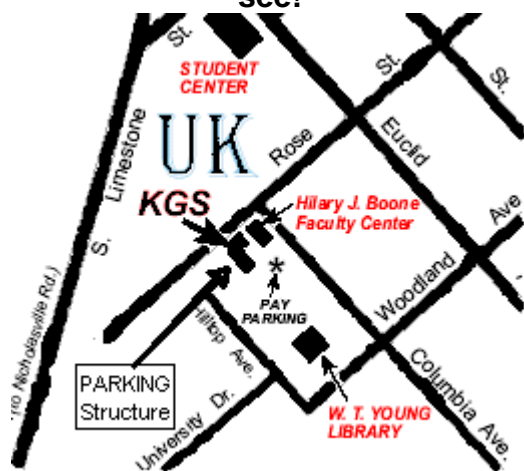
(see map below). The Mines and Minerals Building is home of the **Kentucky Geological Survey (KGS)**. It is conveniently located on the University of Kentucky campus. **Free** parking is available in the parking structure located on Hilltop Avenue.

**SPEAKER:** Dr. Alycia Stigall, Department of Geological Sciences and Ohio Center for Ecology and Evolutionary Studies at Ohio University

**TOPIC:** "Tracking species through space and time: The impact of invasive species during the Late Devonian Mass Extinction and Late Ordovician Richmondian Invasion".

Discussion of upcoming KPS field trips and meetings. Feel free to bring snacks, etc. for our hospitality table!

**Bring your unidentified specimens for us to see!**



**NOTE THAT ROSE STREET NO LONGER CONNECTS WITH NICHOLASVILLE ROAD!  
FREE PARKING AT THE STRUCTURE ON HILLTOP AVENUE.**

## MEMBERSHIP

MAIL TO: KENTUCKY PALEONTOLOGICAL SOCIETY, INC.  
 2004 Sawyer Court  
 Lexington, KY 40514

### SOCIETY PURPOSE

The Kentucky Paleontological Society was founded in 1993 for the purpose of promoting interest in and knowledge of the science of paleontology. It is intended that the Society be a network for the exchange of data between professionals and

serious amateurs in the field. A newsletter is published monthly, and several field trips are arranged annually.

Meetings of the Society are held once a month. Visitors are welcome.

**Family Membership.** For families. \$17 annually.

**Individual Membership.** \$12 annually.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE # \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_

DO YOU WANT TO RECEIVE THE NEWSLETTER BY **REGULAR MAIL or E-MAIL?** Circle one.

I hereby promise to support the ethical standards and purposes of this society-

(Signed) \_\_\_\_\_

### CODE OF ETHICS

I. Members shall not collect specimens where prohibited by federal, state or local laws.

II. Members shall not trespass on private property. All private property laws shall be respected by members.

III. Members agree to protect scientifically important sites. These sites will be made known to members by the Executive Committee.

IV. Members agree to make all specimens of scientific importance available to recognized scientific researchers or institutions for study and photography before final disposal. Sale of specimens of scientific importance should be done with respect towards their scientific value; donations to scientific institutions are encouraged.

V. Members agree not to over collect sites, thus allowing others to study and enjoy those sites.

VI. Members agree not to collect in advance of Society field trips.

*The following (optional) information will be included in the society's membership directory:*

OCCUPATION

INTERESTS/COMMENTS on the back of the form: