

M.A.P.S. *Digest*

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A LOVE OF FOSSILS BRINGS US TOGETHER

Lizzadro Museum-August 19
2 p.m. cost: \$6.00 per person

A hands on, in depth look at fossils using real specimens. Learn more about the formation of fossils as well as information on how and where to hunt for fossils and their identification.

2006 Falls Fossil Festival

September 16 (9:00 AM – 6:00 PM) – 17 (10:00 AM - 5:00 PM)

Guided hikes of the fossil beds, Speakers, Liter's Quarry fossils dig, vendors, door prizes, children's activities.

For more information, go to:
www.fallsoftheohio.org

DIGEST CONTRIBUTIONS WANTED

Articles and other materials of paleontological interested are needed for future issues of the Digest. Soft copy in Microsoft Word is preferred. Please email materials if possible to either:

fossilnautiloid@aol.com or cdcozart@aol.com

Hard copy may be mailed to:
John Catalani
3405 High Trail
Woodridge, IL 60517

ABOUT THE COVER

Photo by C. Cozart

This month's cover photo is a Melonechinus echinoid found in the Middle Mississippian St Louis Ls. Fm. of St. Louis, Missouri. See EXPO article.

2006/05 DUES ARE DUE

Are your dues due? You can tell by checking your mailing label. It reflects dues received by April 30, 2006. The top line gives the expiration date in the form of "year" followed by "month" – 2006/01 means 2006/January. Dues cover the issue of the Digest for the month in which they expire. We do not send notices but will let you know if you are overdue by including "OVERDUE" next to your due date on your Digest. We carry overdues for two issues before dropping them from our mailing list.

Please include on your check your due date and name exactly as it appears on your mailing label - or include a label.

Dues are \$20 per U.S./Canadian household per year. Overseas members may choose the \$20 fee to receive the Digest by surface mail or a \$30 fee to receive it by airmail. (Please send a check drawn on a United States bank in US funds; US currency; a money order; or a check drawn on an International bank in your currency.) Library/Institution fee is \$25.

Make check payable to MAPS and mail to:
Sharon Sonnleitner, Treas.
4800 Sunset Dr. SW
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Why all the diversity? The fossil history of plant-insect associations

Abstract: Keynote Presentation given at MAPS 2006

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The most pronounced effect of the colonization of land was the proliferation of associations among the two most dominant and diverse organismic groups: vascular plants and arthropods, particularly insects. Although the earliest preserved terrestrial biotas harbor relatively few associations among these two clades, consumption of live sap, spores and epidermis indicates the early partitioning of plant tissues. Further histological subdivision and plant-host specificity became pronounced during the Late Pennsylvanian, by which time almost all major functional feeding groups became established, including external foliage feeding, piercing-and-sucking, galling, wood boring, and palynivory. Although it is difficult to quantify the extent of Carboniferous coal-swamp herbivory, some drier sites during the Early Permian had herbivory levels approaching half of the values of modern tropical forests. Most of these Paleozoic associations were extinguished by or at the end-Permian, after which there was widespread replacement of Permian plant hosts and their dependent herbivores by new suites of Triassic taxa, but within the same stereotyped associations. Additionally, like the Middle-to-Late Pennsylvanian extinction, there was a replacement of dominantly Permian exophytic associations with dominantly Triassic endophytic associations.

The establishment of modern-aspect associations such as leaf mining, galling and seed predation was launched by the Late Triassic on a diverse gymnospermous flora of ginkgophytes, bennettitaleans, peltasperms, cycadophytes and gnetaleans, as well as ferns. The similar colonization of angiosperms about 100 million years later during the Early Cretaceous is best considered a later phase on one particularly successful seed-plant clade. This mid-Mesozoic pattern also is supported by more indirect data for nectarivory, pollinivory and pollination mutualisms, evidenced by biotas with plant reproductive structures, insect mouthparts, and gut contents consistent with such associations or their precursors. Nevertheless, at the end of the Cretaceous, associations between varied herbivore taxa and their angiosperm hosts were significantly decimated, at least regionally, resulting in Paleocene biotas that were exceptionally depauperate of herbivore damage. During the early Eocene these damage and diversity levels approximated the end-Cretaceous maximum, perhaps accentuated by the Early Cenozoic Thermal Maximum interval, during which two major, modern strategies for antiherbivore defense are recorded. These data indicate that the history of plant-insect associations is one of ecological opportunism, ancient associations coexisting with modern ones, and the replacement of plant and insect co-participants within unvarying functional feeding groups in time and space.

2006 MAPS EXPO “The Year of the Insect”



Keynote speaker Conrad Labandiera

The theme for MAPS EXPO 2006 was “The year of the insect”. This year’s keynote speaker was Conrad Labandiera of the Smithsonian Institution. Conrad’s program was an analysis of the fossil history of plant-insect associations. A question and answer session was held after a very insightful presentation. (See abstract nearby.)

Saturday night’s program consisted of the business meeting followed by the annual auction for the benefit of the MAPS Scholarship fund. The auction was its usual success, thanks to those who donated specimens, and the auctioneer staff.

Among the awards given this year was the Don Good Award, presented by MAPS President Marv Houg to Steve Holley for years of providing educational exhibits and talks on fossils for children at MAPS EXPO.

Also presented (in absentia) was the President’s Award to Kathleen Morner for her work as Editor of the EXPO Digest.



Steve Harvey and Marv Houg



A wide selection of fossil and fossil related materials was available for sale on the show floor from the many amateurs and dealers attending.

Specimens of all kinds, tools, books, reproductions, and display supplies were available from novice to advanced collectors/students.

This year MAPS was fortunate to enjoy some special exhibits of both vertebrate fossils and invertebrate fossils.

A fossil "dig" was available giving kids the opportunity to make their own fossil finds to take home.



Many people considered the case displaying a beautiful plate of the Middle Mississippian echinoid *Melonechinus* sp. the highlight of the Show. A MAPS member found the specimen in the St. Louis Limestone in the St. Louis area. About 100 hours of preparation time was invested before putting the specimen on display.



“Collect the Site”
By John A. Catalani
Fossilnautiloid@aol.com

As you are by now well (some may say painfully) aware, I collect nautiloids in general and Platteville (Ordovician) nautiloids in particular. I have previously published a range chart for the Middle and Upper Ordovician nautiloids of the upper Mississippi Valley region and, more recently, Bob Frey and I have published a GSA poster-session abstract and are in the process of writing additional papers on the Platteville nautiloids to be published in the, hopefully, near future. These articles will deal with not only new genera and species, which I have been fortunate to find but also a re-evaluation of the previously published taxa. My collecting compatriots know this, as do most of the members of the amateur clubs I belong to. If I were a professional, this would be called a research interest. Since I am an amateur, it is referred to as an obsession.

Therefore, it comes as a bit of a surprise to some, particularly those familiar with my habit of extolling the virtues and significance of the obviously superior nautiloids, that, when my clubs present programs on non-nautiloid topics, I would bring specimens of the fossil group under discussion be they clams or blastoids or shark teeth or whatever. These specimens were collected not only in Ordovician rocks but also, obviously, in rocks of other time periods such as the Mississippian or Pennsylvanian. To these somewhat confused individuals, I pass along the phrase that had become my motto virtually from the inception of my collecting career: “Collect the site”.

This is appropriate advice for all of us involved in collecting fossils--amateur, professional, and commercial. Those of us collecting fossils are really collecting information--information that documents the presence of various taxa at a certain time in a specific locality (spatial and temporal data, if you will). Systematic collecting and the recording of precise stratigraphic and locality information insures that the data set represented by the fossil specimens is documented and available for present and future faunal studies.

This is particularly important for those localities that have the potential of becoming significant sites.

However, this collect-the-site approach is also important when it comes to newly discovered localities since, as we all know, collecting sites are ephemeral and one cannot predict how long a site will be exposed or available for collecting.

Yes, I have developed a definite bias towards nautiloids (and Fleetwood Mac, Eric Clapton, history-of-science books, and Panda Express--but I digress). However, I also recognized very early in my collecting career, fortunately, the importance of collecting specimens of all taxa present at a site so that the entire fauna could be documented. These aggressive collecting practices can be summarized by paraphrasing the old Chicago adage about voting in elections: collect early; collect often.

One of my former favorite collecting sites (it has in past years been closed because of irresponsible “collectors” and, most recently, new owners--sound familiar?) illustrates the necessity of collecting often (34 trips in one year--a personal record for one site). I had been collecting the quarry for about nine years and had amassed an amazingly diverse collection (present totals: 128 species in 100 genera in 9 phyla) for one Ordovician quarry. However, it was three or four years before I found my first *Hippocardia* (a rare conocardium-type rostroconch) and a full five years before I found my first *Ulrichoceras* (a very rare nautiloid).

Another, somewhat humorous, example of diligent collecting involves a 30+ cm straight (actually very slightly curved) nautiloid that I found at another quarry in three pieces. Now, finding a straight nautiloid, or any other for that matter, in three pieces is not unusual--they often break due to their large size and/or quarry operations. What makes this specimen unusual is that the three pieces were found on three separate occasions over a period of 18-or-so months (this quarry was idle at the time). The last piece, the end of the living chamber that I actually recognized as *possibly*

belonging to the specimen in question, had been preserved inside a fragment of a larger nautiloid. Go figure.

It soon becomes apparent to most serious amateurs that all types of fossil organisms are inherently important and should be collected. You yourself may not be interested in that particular organism but some other amateur probably is and undoubtedly some professional is using that particular organism in their research. Additionally, collecting the complete suite of fossils at a site puts your favorite organism into a context and helps define the milieu in which they lived. I have had first-hand experience with this when John Pojeta asked to see my Platteville clams--one of his interests. He was planning to attend the Fifth North American Paleontological Convention to be held at Chicago's Field Museum. Since I live in one of Chicago's suburbs, the opportunity presented itself for John to view my collection. I cannot even imagine how my credibility as a serious amateur collector would have been affected if I had to tell him, "Sorry John, I have no clams. I collect only the nautiloids and leave all the other stuff at the site." Fortunately, my collect-the-site philosophy provided John with many clams from several formations/members from many localities for his research (the same would be true for gastropods--the other major part of the in-bed Platteville fauna).

I collect my "recreational" sites (i.e. non-Platteville) in a similar manner. Even though the emphasis of my, say, Mississippian collection is echinoderms or Pennsylvanian collection is shark teeth, I collect all types of fossils from each locality be they nautiloids (duh), snails, clams, bryozoans, corals, or whatever. Several examples illustrate the advantage of the collect-the-site strategy. The first involves a rock I recently collected at a Pennsylvanian quarry in central Illinois that had something smooth embedded in it--so embedded that I could not identify it, or even determine if it was organic, on site. At home, excavation and preparation revealed it to be a one-inch bone from the limb of some vertebrate probably an amphibian. Not being able to identify a specimen on site is no reason to leave it uncollected. The second concerns a slab I found at a favorite Ordovician quarry in north-central Illinois. Embedded in this small rock were what appeared to be fragments of a trilobite preserved upside down. I actually thought about

tossing the specimen because, as we all know, trilobites were merely snack food for my nautiloids.

My collecting philosophy, however, would not tolerate such a thing so I brought it home and soaked it in water for a bit. After soaking, cleaning with a toothbrush (the matrix was mostly soft mudstone) revealed not one but two fairly rare *Gabriceraurus* trilobites that, since they were both fossilized upside down, preserved the hypostomes in place. Enough said.

Granted the collect-the-site method results in more specimens and takes up more space but it also results in a more satisfying and scientifically significant collection. Such complete and well-documented collections will also be more desirable to whatever institution one decides to donate them insuring that they will be correctly catalogued and assimilated into their collections--remember, time and space are valuable commodities to such institutions.

Does the collect-the-site approach insure a complete and unbiased collection? Certainly not. Any collection is the result of many factors--some physiological, some subconscious, some intentional.

Let me explain. Even the best of intentions in acquiring a complete collection depends on the specimens one actually sees. Therefore, when my eyesight changed in my late forties the use of "reading" glasses revealed many more fossils on site--a physiological effect. I really try to collect a complete sample of the fossils present at each locality but I often find myself, quite subconsciously, searching out and collecting more nautiloids than other members of the fauna--a re-focus is then necessary to insure a representative collection. Additionally, my acceptance of fragmentary specimens is definitely more tolerant with respect to nautiloids than, say, clams or snails--clearly intentional. And even with the most effective and diligent sampling techniques, it often takes multiple sites to evaluate the diversity of a particular geologic formation. With such collecting practices, one can amass a personally satisfying as well as scientifically significant collection--a collection destined for posterity. (Reprinted with modifications from *American Paleontologist* August 2000 courtesy of the Paleontological Research Institution. All rights reserved.)

MAPS MEETING – APRIL 8, 2006

Western Illinois University Western Hall, Macomb, Illinois

The meeting was called to order by President Marvin Houg at 7:20 p.m. Marv introduced and recognized the members of the Board. Expo Chairman Gil Norris recognized the following members who helped with expo:

Marc Behrendt, Table Chair, who acknowledged Steve Holley for help with setup

Randy Faerber, Auction Chair, who acknowledged Wanda Aldred, Vivian Shaha, Scott Vergeil's wife and daughter and the dealers for their help with and/or donations to the auctions.

Karl Stuekerjuergen for making arrangements for the speaker and coordinating with Mark Shurilla

Sharon Sonnleitner, Treasurer, who acknowledged Dale Stout, Connie & Neil Snepp, Don Bissett,

Nancy Mathura, Kay Harpold, John Catalani, and Allyn Adams for their help at the front desk and stuffing and mailing the Digest packets.

David Kaplan, Publicity Chair

Jack Bailey for support at the University and local publicity

Mark Shurilla, Expo Digest Editor

Michael Sincak for bringing a special exhibit

Marv then thanked Gil and Karl for their work as Chair and Co-chair of expo.

In the absence of Secretary Doug DeRosear, Sharon Sonnleitner read the secretary's minutes. Karl moved the minutes be approved as read. Motion was seconded and carried. Treasurer Sharon Sonnleitner reported balances of \$5,673.43 in checking and \$9,647.44 in savings for a total of \$15,320.87. Gil moved that the treasurer's report be accepted as read. Motion was seconded and carried.

NEW BUSINESS

Mark Shurilla asked that we consider adding advertising inside the front cover and both sides of the back cover of the expo Digest, continue printing it as a magazine and put it in museums for sale to increase revenue and exposure for MAPS. Marc Behrendt moved that Mark Shurilla prepare a formal proposal on the costs, projections, etc., and present it to the Board for consideration. Motion was seconded by Kay Harpold and carried. In discussion it was suggested advertising be limited to museums, not commercial businesses. It was also noted six dealers would like to advertise in the Expo edition.

Marv called for nominations for the Eugene Richardson and Strimple Awards. Sharon will send the information regarding the Richardson Award to the Editors for publication in the next Digest. Gil moved that we recommend to a professional the nomination of Tom Witherspoon, Sr., for the Strimple Award.

Marv noted two different TV stations carried stories on expo, one Friday and the other Saturday. Saturday's local newspaper carried a significant article on expo.

Randy suggested that people who sell on ebay add expo cards to their orders, as some dealers did this year, to increase exposure for MAPS and expo.

John Washburn addressed the problem of few dealers left of Sundays. He suggested charging by the day and giving a discount for Saturday; i.e., charging more for Friday and Sunday so people will have an incentive to stay.

Charles Newsom suggested putting the Digest on disc.

Proposed themes for 2007 were Dinosaurs, Petrified Wood, Starfish & Echnoids, and Gastropods. Mark Shurilla promoted Dinosaurs, stating he has connections with scientists in the West. Michael Sincak noted we should be

careful what direction we go with the Digest in targeting an audience and connecting up with professionals, some of whom do not like amateurs – do we want to be informational or what? Charles suggested a theme of Fossil Shells, noting the title and emphasis are important depending on what our target audience is. Randy moved that Dinosaurs be the theme for 2007. Motion was seconded by George Aldred and carried. The Board will discuss advertising, format, and target for the expo Digest.

At 8:10, Randy moved the meeting be adjourned. A live auction followed. Marv was the auctioneer, Charles Newsom announced the items, and Jeff Groff spotted for Marv and delivered items.

Sharon Sonnleitner, Acting Secretary

Letters of Appreciation

FROM THE UNIVERSITY OF IOWA

January 5, 2006

Dear Sharon,

Thank you so much for the donation of \$300 you sent to the A. O. Thomas Memorial Fund on behalf of the Mid America Paleontology Society. The continuing support we receive from the Society is very much appreciated. The Geoscience faculty, students, and I, are looking forward to participating in MAPS events this year.

With very best wishes for 2006.

Tiffany Adrain, Collections Manager, Paleontology Repository

FROM THE PRI

December 21, 2005

Dear Sharon,

It is a pleasure to acknowledge the Mid America Paleontology Society's recent unrestricted gift of \$700 to the Paleontological Research Institution. Your gift will make a meaningful difference in advancing and spreading knowledge of the history of life on Earth and is greatly appreciated.

As a donor, you are part of a dedicated group of friends who realize the value of unrestricted support. Funds contributed to PRI without restriction afford us the greatest flexibility in meeting our financial obligations. The support received this past year alone has resulted in a stronger organization, better equipped to actively focus on and execute our fourfold mission: education, collections, research and publications...

Thank you for your support.

Sincerely, Warren D. Allmon, Director