M·A·P·S Digest

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Mid-America Paleontology Society

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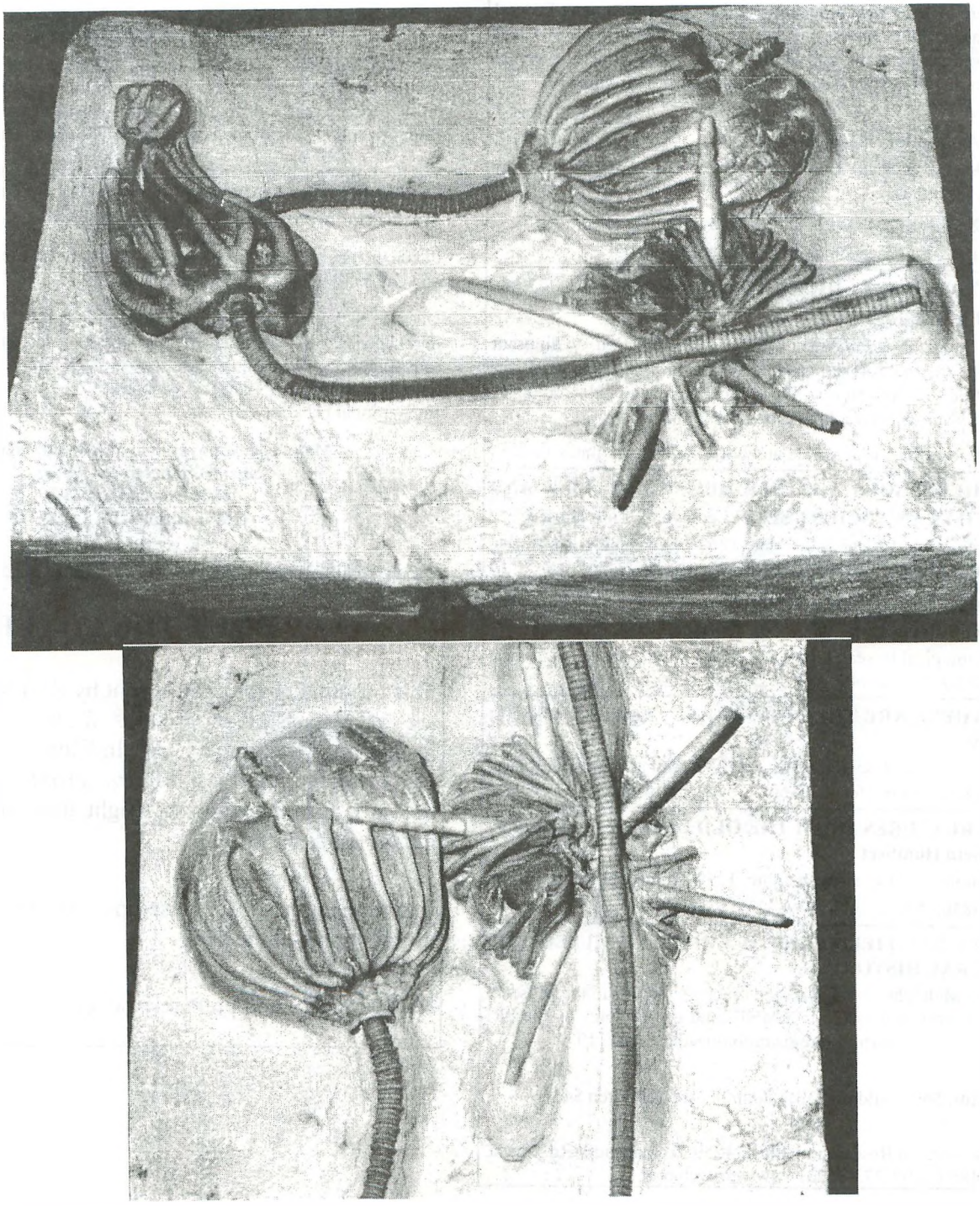
November 2000



A LOVE OF FOSSILS BRINGS US TOGETHER

MARK YOUR CALENDARS

Nov 11 Cornell College Norton Geology Building, Mount Vernon, IA.

1:00 Board & General Meeting Combined

2:00 Program by Cornell Geology Professor

Nov 13-15 THIRD CONFERENCE on PARTNERSHIP OPPORTUNITIES for FEDERALLY ASSOCIATED COLLECTIONS, Austin, TX

Goals are to foster communication and cooperation among Federal and non-Federal managers of Federal collections, to create new and revive old partnerships, and to improve technical expertise related to managing Federally associated collections of all kinds.

Texas Association of Museums
3939 Bee Caves Road, Building A, Suite 1-B
Austin TX 78746
ph. 512-328-6812; fx. 512-327-9775; e-m. Tam@io.com
Web Site: http://museums.doi.gov/fedcoll/fedcoll3/

Dec 1-Jan 7 DINOFEST CHICAGO®Beijing mammals

Navy Pier, Chicago

At the heart of ***Dinofest®*** is the largest collection of dinosaur fossils, casts, models, art, and reconstructions ever gathered for exhibition — from all over the world. Renowned paleontologists and dinosaur reconstruction artists attend the event.

More information is available at www.dinofest.com/index.html

Dec 2 "THERE GOES THE NEIGHBORHOOD: LIFE AND DEATH IN AN ANCIENT SEA," Lecture by Paul Harnik

Paleontological Research Institute, 1259 Trumansburg Rd, Ithaca, NY 14850. Noon. 607-273-6623. www.priweb.org

Jan 13 "HUMAN EVOLUTION IN THE ICE AGE," Lecture by Dr. Warren Allmon

Paleontological Research Institute, 1259 Trumansburg Rd, Ithaca, NY 14850. Noon. 607-273-6623. www.priweb.org

Feb 10 "WHERE ARE THE DINOSAURS?" Lecture by Jane E. Ansley

Paleontological Research Institute, 1259 Trumansburg Rd, Ithaca, NY 14850. Noon. 607-273-6623. www.priweb.org

Mar 10 "CREATURES FROM THE OLD LAGOON," Lecture by Elizabeth Humbert

Paleontological Research Institute, 1259 Trumansburg Rd, Ithaca, NY 14850. Noon. 607-273-6623. www.priweb.org

Mar 17 ALL DAY FIELD TRIP TO AMERICAN MUSEUM OF NATURAL HISTORY

6 am to Midnight. Transportation on chartered bus to the Museum in New York, admission to AMNH, and guided tours by the PRI staff. Meals on own. Preregistration deadline Mar. 10.

PRI Mbr: $60 (children $38); Nonmbr. $65 (children $43)

Paleontological Research Institute, 1259 Trumansburg Rd, Ithaca, NY 14850 607-273-6623. www.priweb.org

Mar 30-Apr 1, 2001 MAPS NATIONAL FOSSIL EXPOSITION XXIII—TRILOBITES

Western Illinois University, Macomb, IL

Fri., Mar. 30	8 am - 5 pm	Keynote Speaker J. Audrain @ 7:30
Sat., Mar. 31	8 am - 5 pm	Meeting & Live Auction @ 7:00
Sun., Apr. 1	8 am - 12 noon	

Information is mailed in the December issue

990/11 DUES ARE DUE

Are your dues due? You can tell by checking your mailing label. It reflects dues received by Oct. 31. The top line gives the expiration date in the form of year followed by month--990/11 means 2000/November. 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 highlighting your mailing label and stamping 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 air mail. (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
Cedar Rapids, IA 52404

ABOUT THE COVER

This month's cover photos, sent by Karl Stuekerjuergen, are of Mississippian crinoids from the Edwardsville formation, Montgomery Co., Indiana. On the slab are *Taxocrinus* sp., (left top), *Agaricocrinites splendens* (left bottom), *Eretmocrinus* sp. (right top), and *Dorycrinus gouldi* (right bottom).

The second photo is a close-up of the two specimens on the right part of the slab.

Karl collected and prepared the specimens.

PROCEEDINGS OF THE BOARD

MAPS Board met in between the two field trips held in Coralville, Iowa, on October 16 to discuss the following items.

EXPO: John Audrain, who is considered a leading authority on trilobites and is a professor at the University of Iowa, will be the Expo keynote speaker.
Wendy Taylor, from the Field Museum in Chicago had contacted Karl Stuekerjuergen about bringing to Expo a cast of the skull of "Sue", the famous T-rex, other skulls found with Sue, and some activities for kids. The Board decided to accept the offer to bring the fossils and present a program.

Marv Houg is designing a flyer for advertising Expo and will send it to David Board to post on our web site.

MISC.: Jim Brace-Thompson has nominated Frank Perry of the Santa Cruz (CA) City Museum of Natural History for the MAPS Eugene Richardson Award. He is securing supporting letters and documents, and the Board will act on the nomination when the materials are received.

Don Wolberg, organizer of Dinofest, to be held at Chicago's Navy Pier December 1 to January 7, has invited MAPS to exhibit. Gil Norris may put in an exhibit representing MAPS. Other ideas may also be considered.

Frank Crane will represent MAPS at the Third Conference on Partnership Opportunities for Federally Associated Collections in Austin, Texas, Nov. 13-15.

ARTICLES NEEDED FOR EXPO AND REGULAR DIGESTS

This year's Expo theme is trilobites. We know there are lots of you out there with lots of knowledge about these ancient "bugs," and we ask you to share that knowledge with other members through the special Expo *Digest*, which will focus on trilobites. Please send articles to

Margaret Kahrs
9145W US Hwy 50 East
Seymour, IN 47274
812-522-6093

Maggie tell us this will be her last year as Expo *Digest* editor, so lets make it a great one. She will need articles by about January this year because Expo is earlier than usual.

While I'm appealing for articles for the Expo *Digest*, I'd like to also put in a plug for articles and covers for the regular *Digest*. All fossil subjects are welcome. Send them to:

Sharon Sonnleitner
4800 Sunset Dr. SW
Cedar Rapids, IA 52404
fx 319-396-7546
<sonnb@aol.com>

PLASTIC BONES ARE BETTER THAN THE REAL THING FOR ACCURATE TRICERATOPS SKELETON

source: Plastic Bones Beat Original Triceratops Skeleton for Accuracy, in *Daily Courier*, Prescott, AZ, 8/25/00

People say you can't beat the real thing, but modern technology is beginning to prove them wrong in some instances, such as the plastic Triceratops being built for the National Museum of Natural History. The original skeleton that has been on display at the Smithsonian is "perhaps the best specimen around," but it was assembled from about 15 different animals, and its head came from a much smaller animal.

Now, thanks to advanced computer technology and a laser scanner which documented "every dimple, bump and scratch,"the Museum's Triceratops has a new 7-foot-long plastic skull that matches its body. The scanner, transmitting millions of signals to a computer was able to determine exact proportions "'down to the millimeter,'" according to the Museums paleobiology department chairman, Richard H. Benson. Scientists then built plaster casts from the resulting three dimensional images. Some bones on one side of the dinosaur are mirror images of those on the other side.

Another plus for the plastic dinosaur is that it can be

SCOLECODONT

MICROFOSSILS OF THE CINCINNATI AREA

Courtesy of the *DRY DREDGERS*, an Association of Amateur Geologists and Fossil Collectors reprinted with permission

Scolecodonts are the small, hard jaw elements of marine annelid worms which have lived in the oceans from the Middle Ordovician to the present time, and exist, today in the form of microfossils. These jaw elements are present in the rocks of the Cincinnati area in great numbers; however, their size makes them easy to overlook. Sizes range from 0.25 mm to about 5.5 mm, less than one quarter of an inch.

These fossils appear as shiny black objects in the rocks, although weathering gives them a copper-brown appearance. A large number of these fossils, in a wide variety of shapes, can be obtained by dissolving the limestones of the area in dilute acid solutions. The jaws, being acid-resistant, are not harmed in the process. However, they are very brittle and handling can be difficult. A number of these can be spotted on the surface of the rocks, especially some of the larger specimens, and can be identified without removing them from the matrix.

Identification of scolecodonts is not done according to the general rules of taxonomy, for which a genus-species name is applied to a whole animal. The jaw apparati of these annelids consisted of from two to nearly twenty individual elements. Upon death, the fragile tissues which held them together decayed and the assemblage fell apart. Wave action, predation, and storms moved these about and makes putting them together very difficult to do, as complete assemblages of the elements are rare. As a result, a parataxonomic system has been applied to them, giving each element an individual species name and basing the genus name on the type and shape of the jaw.

Species identification, in this system, can be very challenging. However, identification on the generic level is more easily accomplished. Following a short glossary of terms are listed some of the more common scolecodont genera found in the Cincinnati area along with a very brief description and a sketch of what a typical jaw would look like. It is hoped that this will prove useful, and that these vastly overlooked fossils will not be so overlooked in your collection.

GLOSSARY

Bight: a concavity in the outer edge of the jaw, open to the posterior.

Dentary: series of denticles along the to or jimer edge of the jaw.

Denticles the individual tooth-like projections on the top side of the jaw.

Falx:: sickle-shaped extension of the anterior portion of the jaw; a hook or fang.

Myocoele opening:
outline on underside of jaw opening into a hollow cavity, created for muscle attachment.

Ramus: any narrow lateral extension of the face of the jaw.

Sinus: cavity on forward edge, produced by a forward directed ramus.

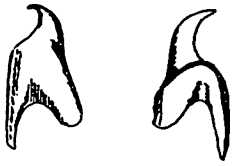
GENERA

Arabellutes: prominent, toothless faix, straight dentary occupies the rear half of the jaw, which is truncate.

Colpogenys: triangular, dentary along longest side; with forward and lateral edges forming a short anteriorly directed ramus; posterior rounded to truncate, dentary "S" curved with prominent first denticle.

Cornugenys: oval jaws with lateral ramus and strongly developed first denticle; one or two large denticles may follow, then smaller ones.

***Croneisigenys*:** slender jaws with oval outline, a well-developed falx and a lateral rainus enclosing a deep bight.



Leodicites: cresent-shaped jaws with the ramus a smooth extension of the anterior edge; no fang or falx; ramus almost perpendicular to the dentrary, in the anterior half of the jaw.

Lobogenys: elongate and oval; dentary curved outward near the anterior end; broad ramal extension near the center enclosing a deep bight; ramus perpendicular or acute to dentary.

Nereigenys: elongate, with a strong hook and a truncate posterior; dentary straight, extending onto the falx.

Oenonites: jaws with a more or less curved anterior hook, followed be a series or smaller denticles.

Paleoenonites: rectangular shape with a forward directed ramus enclosing a sinus in the anterior edge; posterior truncate; first denticle usually forward directed, others may be blunt.

Prolarabellites: broad jaws with laterally extended inner and outer edges; dentary curved outwardly on the anterior end with a prominent fang; posterior is tapered or rounded.

Rhamphegenys: small jaws, usually slightly curved and beak-shaped; consist of a single denticle.

Staurocephalites: flat to slightly curved jaws with comb-like teeth and the anterior edge slanted back toward the denticles.

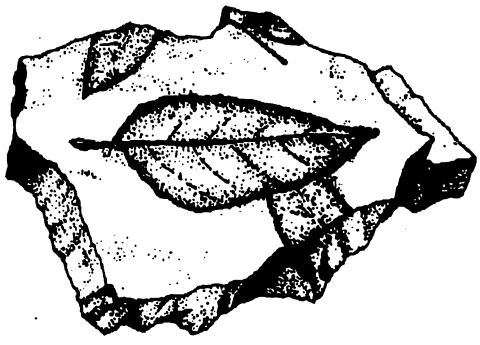
COLLECTING AT DOUGLAS PASS IN COLORADO

by Joan Crane
from *Paleo Newsletter* 8/00, Jean Wallace, Ed

Most of the members of the society (Austin Paleontological Society) know that we almost always go to the Badlands of Nebraska, South Dakota and Wyoming. This summer was the same. After a so-so collecting trip in Nebraska, we decided to try a site that we had not visited in almost five years.

We traveled to Grand Junction which is the gateway to Douglas Pass in Colorado. This is one of our most favorite collecting sites for Eocene leaves and bugs. When we arrived at the site, to our surprise, there was a new metal gate blocking the entry to the collecting area with signs saying, "No Entry, trespassers **will be prosecuted** to fullest extent of the law", and "This is Federal Property and no entrance is allowed".

As we were collecting on the outside of the gate, one of the FAA personnel, Kirby Gaines, drove up and we talked for some time. He informed us that the gate had ben placed here because young bikers had broken into some sheds and other things and since this was FAA property and thousands of lives were dependent on the proper operation of the facility, they felt that it was proper to erect the gate. This facility controls air traffic from Oklahoma City to Salt Lake City.



The good news is that he told us that collecting is still allowed on the upper part of the hill as long as no one enters the facility. The upper part of the hill can be entered by road (ruts) a hundred yards south of the gate.

Douglas Pass is easy to find. It is accessed by CO 139. At the top of the pass there are several Colorado State transportation buildings on the east side of the road. You then travel up a gravel road about 5 miles and 2,000 feet in elevation to the top of the mountain. You can come in from the south on IH-70 and access CO 139 at Loma, a few miles west of Grand Junction. You can come in from the north through Rangely, which is on CO 64. We have always found it easier coming from the south as there are more motels and restaurants in Grand Junction than in Rangely. Also, IH-70 is a better route through Colorado.

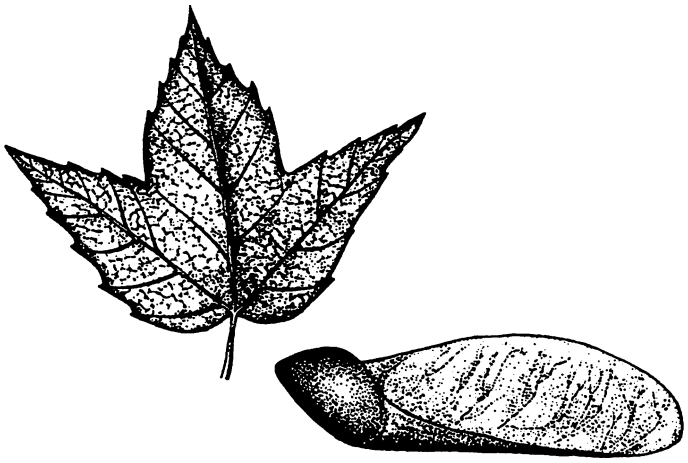
For those who are not familiar with the area, the material is of Eocene age and the formation is Green River shale. Collecting is very simple, dirty and almost easy (compared to hard rock collecting). You will need a rock hammer, a pick and a very thin tool like a paint scraper. The best method we have found is to start at the top, cut back about two (2) feet of overburden (that's what the pick is for). Remove the overburden until you reach the flat shale. Pry up slabs of the flat shale and start splitting the slabs horizontally with our hammer and paint scraper. Sometimes the slabs reveal nothing, but sometimes the slabs reveal leaves or bugs or both. Occasionally you will find boh the positive and negative sides of the leaves. To preserve the items, we use a 50/50 mixture of Elmers Glue and water. When the mixture drys it becomes transparent.

One last reminder: **DO NOT ENTER THE FAA PROPERTY.**

In addition to great collecting, the views from the site at the top of the mountain are breathtaking, so be sure to bring your camera.

Happy collecting.

Frank & Joan Crane

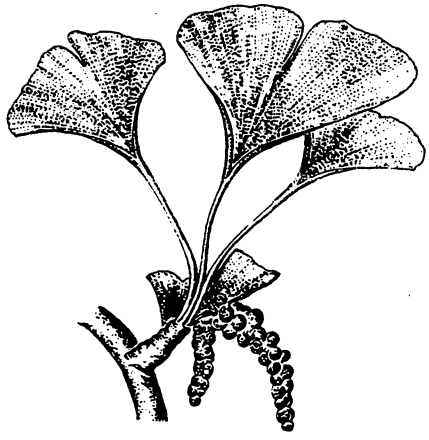


***Acer* (maple) leaf**

GINKGO
Unchanged Since Early Times
from *The Lithnics* 10/99, via *Paleo Newsletter* 6/00
Jean Wallace, Ed.

Already ancient when dinosaurs walked the earth, one species of tree survives virtually unchanged into the space age. Defying air pollution, disease and insect infestation, just as it has for 250 million years, the ginkgo *(Ginkgo bilaba)* flourishes along city sidewalks and thoroughfares in the U. S. and other temperate regions of the world, according to the *Wood* magazine.

To the ginkgo, 20th century perils don't stack up to those of past millennia. Drifting continents failed to destroy it. So did alternating climatic cycles of tropical temperatures and frigid ice ages. Unlike its contemporaries, the ginkgo defied death. It also stopped evolving as far back as the Paleozoic era, appearing today as it did in prehistoric times.



By the time man began migrating and populating the planet, the ginkgo had retreated from its once-global range to the mountain forests of eastern and western China. There it thrived until the early 1700's when explorers brought seedlings to Europe. In 1784 the ginkgo was introduced to America.

In China, the ginkgo yielded its wood for craving, and the nuts of its somewhat foul-smelling fruit (that only the female tree produces) for toasted treats. In the ginkgo's new lands, it makes the ideal ornamental and hardiest of all street trees.

Scientists even believe the ginkgo to be the living link in the evolution of ferns to trees.

IMPOSSIBLY HUGE DINOS: MYSTERY SOLVED! (AN IMMODEST PROPOSAL)
by Hugh Johnson
from *The Fossil Record* 6/00, John P. Meyer, Ed.

Every paleontologist is acutely aware of the problem. Even casual science buffs scratch their heads over it. The question is this: How do you explain Sauropods too huge to lug their weight around, and Pterosaurs too heavy to alight for flight?

I believe I have found the answer in higher physics. I began looking to physics with the idea that density fluctuations of weakly interacting massive particles (WIMPS), popularly known as "dark matter," may have slowly changed the earth's gravitational constant over millions of years, and that everything may have weighed less eons ago. Unfortunately, this turned out to be an unworkable hypothesis, since the outward pull of extra-atmospheric WIMPs would offset the inward pull of WIMPs orbiting the earth's core or passing through our bodies. However, it was during my perusal of the physics literature that I stumbled upon this astonishing set of seemingly unrelated facts: 1) The controversial Pons-Fleischmann cell — the famous mechanism of cold fusion power generation — resembles nothing so much as a large animal's gizzard; a flask-like container full of spheroids, bathed in a continually replenishing watery medium. 2) Heavy atomic isotopes were more common on earth when the planet was young. These isotopes included deuterium, the major constituent of 'heavy water' and the fuel used in fusion reactions. 3) Helium is a major byproduct of deuterium fusion reactions. 4) Helium is an inert very lightweight element, which does not combine into chemical compounds and which cannot be trapped in the earth's gravity well over long periods of time. A helium atom, left undisturbed, will always find its way to the outer fringes of the earth's atmosphere, where it will be blown away by the faint solar wind. Thus, science has never been able to explain the presence of helium in deposits of natural gas and other fossil fuels. 5) Sauropods bear a striking resemblance to helium-filled blimps and dirigibles.

With these facts in mind, I now assert — contrary to conventional wisdom — that sauropod dinosaurs were NOT built like absurdly huge "fermentation vats", designed to digest primitive plants. Rather, they began their evolutionary odyssey as unremarkable-looking creatures who developed the trick of producing energy by nuclear fusion. A simple mutation of the gizzard is all it would take to set them apart from the iguanadons and hadrosaurs. We can imagine these unremarkable beasts stationed beside a watering-hole, drinking and urinating a steady stream, drawing energy from heavy water while fulfilling their modest protein needs with pond scum and bottom silt. Their necks grew longer to reach deeper water as the heavy isotopes grew scarce. Eventually, their necks were so long and unwieldy that they could not walk without lightening the load somehow, and that's when they began storing helium in their little-used gastrointestinal tracts.

For millions of years, they existed as balloon-like floaters, at the mercy of the winds. When the weather cooperated, they would hover head-down above the water, regularly lowering themselves for a drink by expelling helium from their gas-bag colons. However, the slightest breeze could take them away, and as desertification spread, with fewer ponds dotting the land, this became an increasing threat. Obviously, they needed their own propulsion and control, as sure as balloons evolved into dirigibles. This is where their symbiotic relationship with pterosaurs comes in.

A one-sided relationship had already developed. The pterosaurs doubtless began as simple surface-swimmers, diving for fish and jumping up onto the jutting perch-like sauropod legs when the nose-down sauropods were half-submerged. The pterosaurs learned that if they stayed on those perches while the sauropods rose back into the air, they would get a broader aerial view of the fish, and they could dive with more certainty of making a catch. Membranes of skin evolved to give the a wider glide-path on their dives. Eventually, the membranes became wings, and the pterosaurs helped the sauropods to fight the winds, like propellers on a powered balloon, so the whole symbiotic rookery could remain safely over water.

The one problem remaining for the pterosaurs was their lack of control over altitude. They grew too big and heavy themselves to provide lift; their role was strictly propulsion and directional control. However, the sauropod's stumpy tail provided a perch for one pterosaur to stopper the gas-bag with its beak, thus controlling emissions. This solution then brought a problem of its own: Who wants to be the loser sitting up there with his face buried in a giant [deleted], while everyone else is out fishing? Thus, the pterosaurs began to prefer long-tailed sauropods, so that more than one of them could perch there and take turns with altitude-control responsibilities.

Over time, the sauropod's lengthening tail balanced the weight of its neck, and the flight angle changed. The pterosaurs abandoned their perches on the legs and took up positions only on the neck and tail. Aerodynamics improved vastly as the whole assemblage began to look more and more like a sleek powered airship. Huge fleets of sauropod/pterosaur dirigibles became a common sight far inland, as they searched for new watering holes to exploit. Watering holes became mere base camps, as the pterosaurs learned dry-land hunting skills, and grew increasingly adventurous, and spread a reign of terror everywhere. But this was their undoing.

Too many times, the pterosaurs pushed their luck, feeling cocky and in control. They rode their giant flying steeds too far from water. The helium ran low; the creatures were stranded, all of them too heavy to budge on their own. And what little helium was left — that's what we find in our fossil fuel deposits — the graves of those poor misguided aeronauts of long ago.

And that's exactly how it happened.

☺ ☺ ☺

PLEASE ADD THE FOLLOWING NEW OR REJOINING MEMBERS TO YOUR DIRECTORY:

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President of Babiarz Inst. of Paleo. Studies, Inc.

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Curator of Natural Science. Will Not trade.

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Teacher-Art. Interested in all fossils. Interested in Learning and meeting people who also love fossils.

Susan Passmore
2378 Frontier Lane
Franktown CO 80116

Eddie Davidson
6520 Hwy 48 North
Cumberland Furnace TN 37051
615-219-2629

Lineman for Power Company. Will trade. Interested in all fossils. Has for trade crinoids, blastoids, corals, etc. Wants to expand his knowledge of fossils and talk with other fossil collectors. Collecting since 1970.

PLEASE NOTE THE FOLLOWING CHANGES OF ADDRESS OR CORRECTIONS:

George Klumb
413 E 12th St.
Naperville IL 60563
708-355-9544

Teacher. Will trade. Major interest marine age fossils. Has for trade brachiopods.

ADVERTISING SECTION

Ads are $5.00 per inch. Send information and checks payable to MAPS to : Mrs. Gerry Norris, 2623 34th Avenue Ct., Rock Island, IL 61201. Phone: (309) 786-6505
This space is a $5.00 size.

To extend currently running ads, please send request and remittance to Editor by the 15th of the month. We do not bill. Ads do not run in the EXPO issue (April). Ads can be printed in different sizes of type to fit a 1" space.

The Mid-America Paleontology Society (MAPS) was formed to promote popular interest in the subject of paleontology; to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Membership fee: $20.00 per household covers one year's issues of DIGESTS. For new members and those who renew more than 3 issues past their due date, the year begins with the first available issue. Institution or Library fee is $25.00. Overseas fee is $20.00 with Surface Mailing of DIGESTS OR $30.00 with Air Mailing of DIGESTS. (Payments other than those stated will be pro-rated over the 9 yearly issues.)

MAPS meetings are held on the 2nd Saturday of October, November, January, and March and at EXPO in April. A picnic is held during the summer. October through March meetings are scheduled for 1 p.m. in Trowbridge Hall, University of Iowa, Iowa City, Iowa. One annual International Fossil Exposition is held in April.

The MAPS official publication, MAPS DIGEST, is published 9 months of the year—October through April, May/June, and July/August/September. View MAPS web page at http://midamericapaleo.tripod.com/

Dated Material - Meeting Notice

CYATHOCRINITES

Mrs. Sharon Sonnleitner
MAPS DIGEST Editor
4800 Sunset Dr. SW
Cedar Rapids, IA 52404

FIRST CLASS MAIL

MID-AMERICA PALEONTOLOGY SOCIETY