

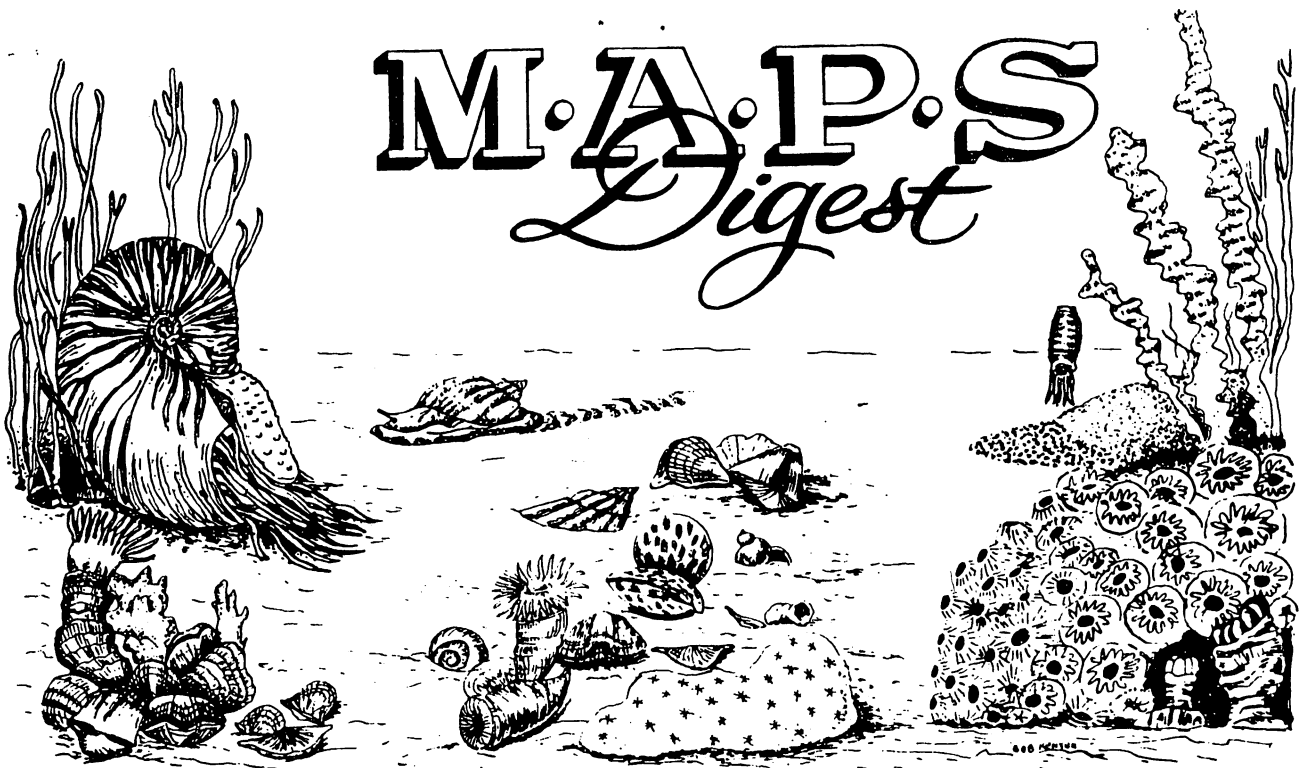
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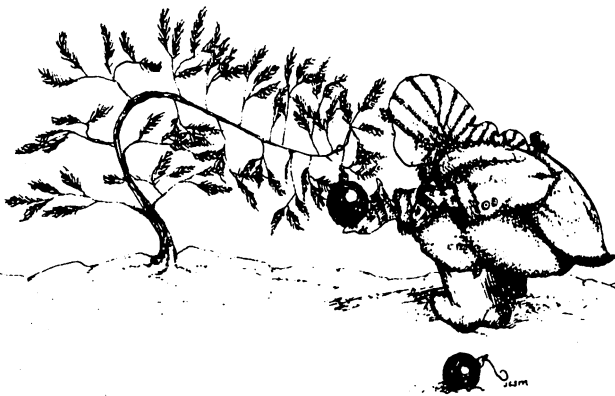
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Official Publication of
Mid-America Paleontology Society

December, 1982



The new and the old have value only as they relate to the present. Yesterday made us what we are today, tomorrow is our dream. To live for either is to lose our only reality, the moment.

--Buscaglia

LETTER FROM THE PRESIDENT

To me, one of the greatest values of MAPS is the opportunity of getting together with others also interested in fossils. Our members who live far away from the Rock Island area do not have this benefit, with the exception of attending the Expo once a year.

There are many areas in the U.S. and some foreign countries where local chapters could be established. To do this, the following procedure might be used:

(continued page 2)

MARK YOUR CALENDARS

- 4 Dec MAPS Meeting -- Augustana College, Rock Island, IL
1:00 p.m. Board Meeting
2:00 p.m. Slide program presented by Doug Johnson on fossil hunting and sightseeing in the Rocky Mountain area Colorado, Utah, Wyoming Montana, and South Dakota

BRING A FOSSIL FOR A GRAB BAG

15, 16, 17 April -- EXPO V - Macomb, IL

SECRETARY'S REPORT

President Don Good called the NOVEMBER meeting of MAPS to order 6 November 82, at Augustana College. Minutes of the October meeting were accepted as printed in the Digest. The Treasurer reported October deposits of \$57.08 leaving an October balance of \$2,197.51. November deposits totaling \$189.25 made the current balance of \$2,396.76.

1983 DUES ARE DUE AND ACCEPTED NOW.

Madelynne reported 365 households received the November Digest. (Ed. comment--lower figure than the preceding month. Books finally closed for current year.)

Don Good appointed Jim Brubaker, Chairman, and Allyn Adams to audit the books. Don reported that the Executive Board of MAPS had voted to send volunteers to Geodeland meeting to investigate an area association with Geodeland. Alberta and Bud Cray will attend that November 20 meeting.

Al Adams reported the committee for studying ways to include all membership in the general election had not yet devised an operable plan.

Madelynne Lillybeck presented the following slate of officers for 1983 from the nominating committee: President, Don Good, 1st Vice President, Doug Johnson; 2nd Vice President, Alberta Cray; Secretary, Peggy Wallace; Treasurer, Allyn Adams; Director, Doug DeRosear. Gil Norris moved a unanimous ballot be cast for the slate. It was seconded and passed.

Alberta Cray made a report on inquiries about a new MAPS patch. Allyn Adams moved that the company be asked to send a design of a 3 x 4 patch to Alberta, that she decide if the design meets the previously agreed upon qualifications and if it does that she order 440 patches.

Gil Norris showed us some labels for display and name card slides for officers made by Fred Farrar. JoAnn Good moved we buy slides for all officers. Marvin Houg seconded the motion and it was passed.

The members decided to ask rock clubs of Sterling and Edwards as well as Black Hawk and Illowa to join MAPS in a paleo display at South Park Mall, Moline in January. The pur-

pose to try to find more local club members.

The Geology Department of St. Ambrose, Davenport, is selling its collection. Allyn Adams has the particulars for anyone who is interested.

Peggy Wallace reported a copy of August, 1982, Tri-State Guide Book, the Mississippi River Arts, Quad-Cities Region is on display. It is available to MAPS members for \$3.00 and may be ordered from the Geology Department of Augustana College, Rock Island, IL 61201.

Business meeting was adjourned.

Dr. Nancy Foster, Research Associate from University of Iowa, presented a slide lecture on corals, Pleistocene to recent.

The December meeting will include a grab bag. Don't forget to bring a fossil for Christmas.



Respectfully submitted
Peggy Wallace, Secretary

LETTER FROM THE PRESIDENT, Continued

1. A volunteer needs to make the arrangements for the initial meeting.
 - A. Determine a time and place for a first meeting (may be in a home.)
 - B. Advertise the meeting in the newspaper and other media, area rock clubs, and the MAPS Digest.
 - C. The first meeting could be a simple "show and tell" plus the business meeting
2. If it is decided to form a chapter locally you will need to--
 - A Determine a time and place for the meeting
 - B. Give the group a name (should include an identifying regional name e.g. Cincinnati area, Lake Texoma, etc.)
 - C. Determine the purpose of the group. You probably would not need a formal constitution and By Laws.
 - D. Elect officers. Should include, but not restricted to: Chapter Chairman, and Vice Chairman, secretary, study leader, and field trip leader.

3. A section of the Digest could be devoted to announcement of meetings, including program each month for the various chapters. It might also include other information that would be generally helpful to others away from the area--such as books on fossils, field trips, etc.

If you're interested in giving a try at setting up a chapter in your area, go to it. I would be happy to serve as liason between your chapter and MAPS for the present. Also, let me have any suggestions.

We may also be able to run articles in the Digest that would help with your programs. They would need to be of a general interest like cleaning, cataloging fossils, etc.

A special thanks to Alan Goldstein of Louisville, KY Hopefully his "Falls of the Ohio Fossil Group" will be a large and successful chapter.

If you like the ideas discussed above, please write and tell me so. Also, give any suggestions you may have. If we get a good response, I will set up a committee to assist in this matter.

Sincerely

Don



CORAL EXCERPTS

Ancient corals are not easily distinguished from corals living today. One must be careful in identifying because light, food, depth, temperature all affect structure (i.e. density and size) enough that one might think like specimens are different species.

Testing and removing dyed living samples from one location to other locations will, in time because of environment, create different appearances.

Corals can break off and form new colonies by anchoring in a new location. They "bud" as plants do and they also form by a fertilized egg which floats for a time until it anchors and seals itself to a base where it begins a new colony.

Corals can be killed on one side but continue to live on the other side of a small colony. Mud flow can be deadly, smothering corals. Many corals prefer to live on the side of a reef where the mud sediment flows by.

Reefs have hundreds of species of corals living in any given area. Corals that form reefs can only live in tropical seas at fairly constant temperatures of 68° to 86° and shallow waters (depths to 180 feet.) Michigan and Iowa long ago were coral reefs.

Some corals live almost exclusively on large shrimp. They have larg tentacles and features. Others tend to feed on minute shrimp, plankton and algae and their features are much finer.

A coral reef can be badly damaged or destroyed by trident (snails.) Starfish, Acanthaster planci, infestation have been known to eat live coral and leave dead limestone. As the predators move on reefs rebuild. Only the top of the reef lives, the rest is skeletal remains.

Algae living in coral tissue give off life sustaining O₂ in return for the carbon dioxide needed for photo synthesis. This O₂ and that already in H₂O spurs growth of the corals enabling the formation of the evergrowing reefs. Coral reef can be more durable than the toughest rock from the land surface.

Dr. Nancy Foster was gentle and knowledgable. Many times she stopped her lecture to field questions from the audience. Her explanations were clear and enlightening. Her slides were beautiful. Many thanks, Dr. Foster.

this is the garden: colours come and go
frail azures fluttering from night's outer wing
strong silent greens serenely lingering,
absolute lights...

LIVING CORALS, Faulkner and Chesher

CORRECTION--PLEASE NOTE

TEXAS PALEONTOLOGY SERIES:

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Publication No. 2, 1982 Texas Cretaceous Bivalves And Localities \$8.25

Texas residents add 5%, Houston 6% sales tax
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CAUTION--PLEASE NOTE

NEW LITERATURE, Continued

A PICTORIAL GUIDE TO FOSSILS by Gerald R. Case see Digest, Vol. 5, #9, November, 1982.

James Sprinkle (ed.), Echinoderm Faunas From The Bromide Formation (Middle Ordovician of Oklahoma). The University of Kansas Paleontological Contributions.

This book is beautifully illustrated. However, a letter from Allen Graffhams says an amateur collector should not use this reference for identification. Mistakes include crinoids and cephalopods.

This monograph of perhaps the largest and most diverse Ordovician echinoderm fauna ever collected includes not only descriptions of two families 17 genera, and 39 species new to science, but a substantial and useful introduction that serves to locate this fauna in geologic time and describe the environment in which it lived and

NEW LITERATURE

A massive study of Osgood (Silurian)echinoderms flourished. T. J. Frest. MAPS members Don Bissett, Bruce Gibson, and Dan Cooper contributed most of the material for this study. For further information, contact Harrell L. Strimple, Geology Department, University of Iowa, Trowbridge Hall, Iowa City, IA 52242.

Order from Exchange and Gifts Dept. University of Kansas Libraries, Lawrence, KS 66045. Check or money order payable to the University of Kansas Libraries, include \$1 for domestic handling.

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Section 6 -- THE ARMS OF CRINOIDS

H. L. Strimple
904 Bowery
Iowa City, IA 52240



Most crinoids have arms and each arm (whether branched or unbranched), together with the radial plate of the cup is called a ray. Those which do not have arms are called a brachiote, are very small, and probably fed with non-skeletal podia. Individual segments are called brachials. The lowermost segments are called primibrachals or primibrachs. If an arm bifurcates (or divides) on the first brachial, then that element is called an axillary primibrach 1 and the next series of brachials are secundibrachs. There are variants of these designations but once you understand the principle involved, they are not difficult to follow. For simplification some authors use symbols like PBr 1 for primibrach 1, but usually they designate what symbols are used the first time they appear in the study.

When the brachials are in a line and have horizontal sutures, they are termed uniserial. When the sutures between the segments are oblique (sort of wedge shaped), they are called cuneate or cuneiform. When the brachials interlock, they may be inequibiserial or equibiserial.

For many years I considered any crinoid which had five arms to be "primitive," or more primitive than related forms. This created some problems with lineages. For example, Cromocrinus Trautschold in the Myachkovian (Moscovian) of Russia has five arms. The age is about equivalent to Middle Pennsylvanian of North America. There is a possibility that Cromyocrinus evolved from an older form like Ureocrinus, Wright & Strimple, but neither genus is "primitive" and both occur with ten armed relatives. It is tempting to say that a five armed condition is inefficient but Synbathocrinus with five non-pinnulate arms, together with its derivative Taidocrinus, and persists from Devonian to Permian time. It does have a small cup as compared to Cromyocrinus but not too much smaller than the cups of Ureocrinus. Very likely it is a divergent trend which became a specialization that takes place in some lineages. The arms of Cromyocrinus are quite thick, are very long and the pinnules are large. Curiously enough, some cromyocrinids add arms, that

If all arms divide equally, they are said to be isotomous. If divisions are not equal, they are heterotomous. The first division is commonly isotomous but often subsequent divisions are from the outside rays inward (endotomous) or inside rays outward (exotomous).

I have not checked on the potential number of arms that might be found but know some pirascrinids (Inadunata) have as many as 80 arms at their tips.

Some primitive inadunate crinoids only bear five arms (which are commonly non-pinnulate).

IS, DEVELOP MORE THAN TEN ARMS (e.g., Parulocrinus, Probletocrinus).

In some crinoids there are no pinnules on the arms (e.g., all flexibles). In most crinoids each brachial bears a single pinnule alternating with the one below or above. Individual segments are called pinnulars. Pinnules and brachials bear podia, fleshy elements which expand from fluid carried in by the "water vascular system." They contract by sending the water back. The podia bear hair-like sensory devices which send a signal when touched and cause the podia to react. A mucous-like substance secreted by the podia serves to capture the microscopic food (larvae minute algae, ostracodes, etc.). The food is carried down the ambulacral canals located on the inside of the arms or pinnules to the mouth and on into the gut. Podia also act as respiratory devices in the exchange of carbon dioxide for oxygen. Remember from statements above they are connected with the water vascular system for expansion and contraction, that is, water rich in carbon dioxide comes from the region occupied by the organs in the theca, in the process of expansion gas exchange takes place and the oxygen enriched water returns to areas where the vital organs are located (coelomic cavity). There are also other methods or points of gas exchange (respiration).

Food (microscopic) is captured from the surrounding water, therefore, crinoids are called mucous filter feeders. The arms and pinnules often form feeding fans for this purpose.

In fossil crinoids the mouth is commonly covered by the tegmen and often the covered ambulacral (food grooves) of the tegmen are easy to distinguish on the tegmen particularly in camerate crinoids. The ambulacral tracts or grooves of the arms or armlets (flexible crinoids do not have pinnules but many have armlets) often have covering plates but it is not proven that all crinoids have such elements which, however, might be a matter of preservation or lack of preservation.

Arms are admittedly somewhat variable in a great number of species or even in some lineages which has caused some investigators to consider them to be too unstable to be useful in phylogenetic (evolutionary) study. As a matter of fact, in my opinion, the arms are remarkably stable in many, if not most species, as well as in higher taxon (genera, families, etc). Certainly some variability takes place and there are commonly transitional forms when almost any morphologic change takes place. In addition, we seldom have a large enough population, that is, specimens of any given species from one horizon and exposure to judge the range of variability and/or aberrations that might normally be expected for any given species.

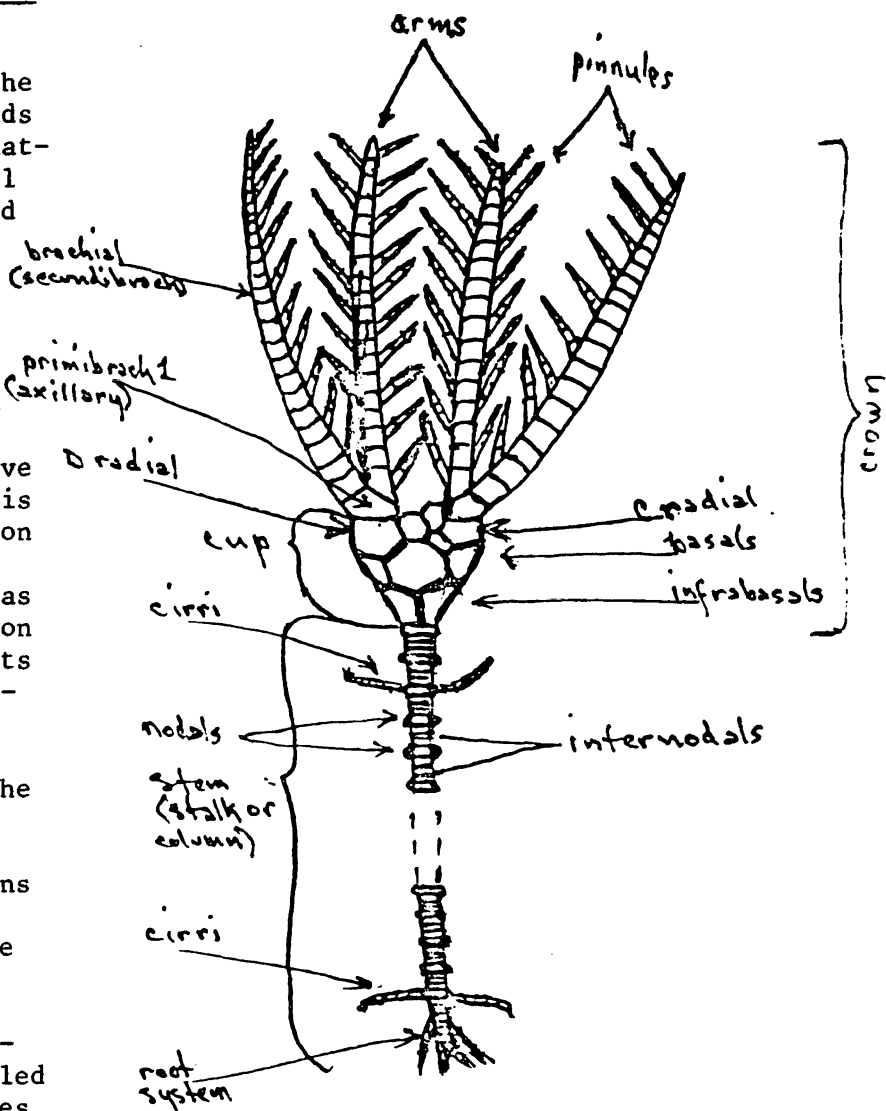


Figure 1. Rough drawing of a dicyclic inadunate crinoid illustrating various parts.



T H E P R O F E S S I O N A L ' S C O R N E R, Continued -- Copyright, 1982FOSSIL SITES AT CRAWFORDSVILLE AND INDIAN CREEK,
Montgomery County, IndianaDr. N. Gary Lane
Geology Department
Indiana University
Bloomington, IN 47405

The Crawfordsville and Indian Creek fossil sites in Montgomery County, Indiana are two of the oldest and best known localities for fossil crinoids anywhere in the world. These two sites were discovered in the early to middle 1800's and were collected for many years. I re-discovered both sites, Crawfordsville in 1963, and Indian Creek in 1966. The former locality had been last collected in 1910, the latter about 1897. Both sites are now owned or leased for professional collecting and sale of fossils.

A modern study of the Indian Creek locale has never been made, nor have the crinoids from there ever been systematically studied as a whole, as Jan Van Sant and I did for the Crawfordsville area. I have seen Indian Creek specimens labelled with Crawfordsville species names, apparently by use of the monograph by VanSant and myself. There seems to be a mistaken impression that the species at the two localities are the same. This is not correct.

The Indian Creek crinoids are younger than those from Crawfordsville. This can be demonstrated stratigraphically, lithologically, and evolutionarily. The Crawfordsville beds are in the Edwardsville Formation, the upper unit of the Borden Group in Indiana. Over 30 meters of siltstone overly the site on the north bank of Sugar Creek. The Indian Creek crinoids occur at the boundary between the Borden Group and the overlying Harrodsburg Limestone, in what is termed the Ramp Creek Member, lowest unit of the Harrodsburg. The Ramp Creek is transitional between the deltaic siltstones of the Borden and the clean shelf limestones of the Harrodsburg, consisting of alternating beds of siltstone and limestone. The crinoids and other fossils occur in the siltstones. Reference to any of these fossils as being from the Muldraugh Formation is erroneous. This latter unit occurs in Kentucky and barely

makes it across the Ohio River a few miles into Indiana.

Crawfordsville crinoids occur in a dark gray, fine siltstone matrix. The Indian Creek specimens are in a brownish-gray coarse siltstone to fine-grained sandstone matrix that is harder and less shaly than Crawfordsville rocks.

A few species do exist in common between the two sites, but many species and genera are different. Where there is commonality, a species is typically rare at one site and common at the other. Where two species in the same genus are known, one at each site, they can be demonstrated to be part of an evolutionary lineage that typically begins in the Burlington Limestone and continues up through Crawfordsville, Indian Creek and still younger crinoid horizons in Indiana. Both the generic and species richness of the two faunas is different. Indian Creek contains many more species and genera of Inadunate crinoids than are known at Crawfordsville. Several genera and a good many species are known only from Indian Creek.

In examining specimens for sale from these two localities you should always try to be sure that you know the locality and check to make sure that the identification is correct. If a Crawfordsville species name is used for an Indian Creek specimen it may be incorrect.

* * * * *

ANOTHER AMATEUR PALEO SOCIETY

The Delaware Valley Paleontological Society was founded in 1978. Regular monthly meetings are held at 7:30 PM on the fourth Thursday of each month (except July and August) at the Academy of Natural Sciences, 19th and the Parkway in Philadelphia, Pennsylvania.

A monthly newsletter is sent, the annual journal, The Mosasaur, is being planned. Field trips are held during the spring and fall months.

The Philadelphia Fossil Fair was established in 1979 by the Delaware Valley Paleontological Society. It is held every spring at the Academy of Natural Sciences.

For more information please contact:

Frank Bukowski
1441 E. Oxford Street
Philadelphia, PA 19125



"How Life On Earth Began" by George Alexander
READER'S DIGEST, November, 1982, pp. 116-20.

A D V E R T I S I N G S E C T I O N ---

PIERO GARONETTI, Via Bassini n. 15, 27100 Pavia, Italy, wishes to swap or to sell large bell shaped Italian Miocene Clypeaster (sea urchin) and Italian Pliocene molluscs from Piacehza and Asti. Interested in fossil Clypraeacea, crinoids, trilobites, Cretaceous cephalopods, and echinoids.

* * *



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* * *

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Mrs. Gerry Norris, 2623 - 34th Avenue Ct.,
Rock Island, IL 61201 -- 309-768-6505

ANIMALS INFECTED WITH GENES FROM UNRELATED SPECIE

By Walter Sullivan, NEW YORK TIMES NEWS SERVICE
NEW YORK--Recently discovered evidence shows that early species were "infected" by genes from completely unrelated species.

The genes, or packets of hereditary information, were delivered by viruses that then became incorporated into the genetic heritage of the invaded species. Ever since they have been passed from generation to generation.

Such gene exchanges could help explain one of the puzzles in evolution: the seemingly abrupt changes that appear to have occurred in the development of many species. For example, although the fossil record traces the history of turtles over the past 250 million years, there is no earlier record of how they evolved from other reptiles. Either the record is lost or they evolved through some form of radical transformation.

Genes provide the basic instructions for construction and function of all animals and their constituent cells. Eight years ago Dr. George J. Todaro and his colleagues at the National Cancer Institute reported that domestic cats and some other feline species carried a viral gene that must have been transferred to them from ancestors of the baboons and other primates.

The gene does not occur in the big cats of Africa nor in wild feline species from the Americas and Southeast Asia. Hence it is assumed that the "contagion" occurred no more than 10 million years ago, after those species had evolved onto separate paths from those of cats carrying the

gene. The gene-carrying group comprises five feline species in the Mediterranean region, including the once-sacred cats of Egypt and their household descendants.

At the time of this discovery, Todaro said recently, it was regarded as "something of a curiosity." It has now been found, however, that such transfers between species have been common. Domestic cats, it seems also carry a virus they acquired from rats. It sometimes causes leukemia in the cats, even though it has no such effect in rats. . . .

There is no evidence of a link between cat and human leukemia, nor have surveys shown a higher incidence of the disease in cat owners.

According to Tordaro's co-worker, Dr. Raoul E. Benveniste, in most cases there is no obvious effect on the recipient species of the transferred genes. Yet their survival through so many generations implies that such genes play a useful role. One possibility, he said in a telephone interview, was suggested by their relationship, in some cases, to the onset of cancer. . . .

Clearly, transfer of a virus and entry of its genes into an alien species has been a rare event in the evolution of any one animal. Todaro said in a telephone interview that the transfers often, if not always, had involved carnivores.



STAR-TRIBUNE, Casper, WY
Monday, October 25, 1982
Thanks to, Dennis Kingery

THIS IS A DREAM

Almost 5 years ago I stumbled on this little organization. It didn't even have a name then. But this small group of people was busy organizing--by-laws, officers, name, logo. I happened upon them at their second meeting. They were wondering if there was enough interest "out there" or enough people "out there" to sustain an amateur fossil organization.

Well, all of you who are reading this know the answers to those musings. It's 5 years later now and I'm probably as lucky a member as there is simply because I have the opportunity to take your readings and original articles and gather them together to be shared by so many who have the same intrigue for those ancient treasures from lands and seas.

I've watched MAPS grow and been involved in that growth. From time to time many of you write, and in the summers when I travel many of you graciously welcome me into your homes and your collecting sites, and I listen to what you say and try to share it with other members. One among you went so far as to wish MAPS had been called Fossil Collectors International.

And so a dream is beginning to formulate. It's an original dream but when I've shared it with other MAPS members they seem to have a similar dream. Like many dreams it is not crystallized but shrouded in mist at the extremities. Envisioned is some sort of society composed of amateur paleontological societies across not only this nation, but other nations as well. (i.e. The Fossil Collectors Association of Australasia, see MAPS DIGEST, Vol. 5 #8, Nov., 1982.) In this issue is an article about one such society founded in 1978 in Philadelphia, see p. 6.

In an upcoming issue of the Digest I would like very much to publish a chronology of as many of these societies as possible with a nub about each of them to include location, the name of their publication, meeting time and place, some person within the organization to contact, and something about the working/purpose of each society. There are many paleo sections of rock and mineral clubs, but I am speaking of strictly fossil societies such as MAPS.

I am aware of an organization in Sacramento, CA, one in southern California, one in Texas, one in Florida, one in the east affiliated some way with The Smithsonian, one in Rochester, NY, one in Philadelphia, one in Cincinnati, and one in North Dakota. No doubt there are others.

Now, will you help? Would you who belong to these organizations send information? If any of you know of other strictly fossil organizations will you send information? The EXPO EDITION has become a Special Edition. EXPO is April 15, 16, and 17. It would be good to include these stories in that edition.

How does the dream end? Who knows? Mists roll and tumble, but like the songs of Orpheus, the songs of those treasures from ancient seas keep calling, and who knows of the intrigue of the evolution of paleo societies. Besides, dreams live on forever.

At this loveliest of seasons, may you find many reasons for happiness.

DR. J.A. ARENDT
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 Academy of Science
 Lenin Prospect 33, Moscow V--71
 U. S. S. R.

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 (Natures Creations of Stone Museum)
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 ey quartz, shells & more

Attorney. Interested in petrified
 wood. Will trade petrified wood.
 will share his interest in petri-
 fied wood with others.

Retired engineer. Interested in
 all fossils. Will trade Pit 11 fos-
 sils, Penn. Pd., Braidwood, Ill.

Geologist (Amerada Hess Corp.-
 Tulsa, OK) Interested in echinoderms
 arthropods. Will trade material from
 Up. Ord. (Cincinnati); M. Sil. (Wal-
 dron, IN); M. Dev. (Sylvania, OH)
 (generally not echinoderms or arth.)

Interested in sharks' teeth and
 fish fossils.

Wyoming Highway Dept.-Photogrammist.
 Interested in Vertebrate Paleo.
 Nothing to trade at the moment,
 maybe a few Farson fish, not Kemmere

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 tional bank. Interested in echino-
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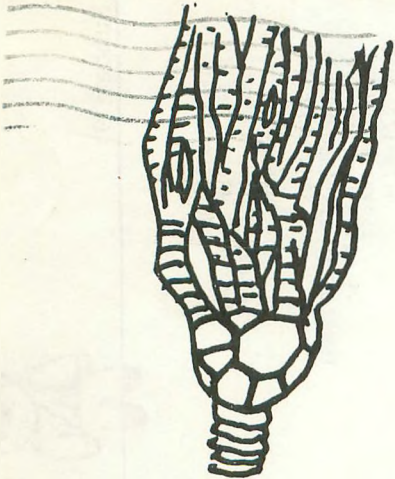
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