

M.A.P.S *Digest*

Official Publication of
Mid-America Paleontology Society
<http://www.midamericapaleo.org>

Volume 38, Number 4

Sept.-Nov., 2015



“A LOVE OF FOSSILS BRINGS US TOGETHER”

Calendar

2015

October 11

Field Trip/meeting to a Coralville, IA, area quarry. See page 5 for quarry safety rules.

November 14

Meeting will be held in Room 125 of Trowbridge Hall at the University of Iowa. MAPS members Ithiel and Janise Catiri, owners of Edelstein Treasures in Amana, Iowa will present a program at 1:00 p.m. on their discovery and ongoing restoration of their own dinosaur. The regular MAPS meeting will be at 2:00 p.m.

2016

April 1-3

MAPS EXPO XXXVIII

Location: Sharpless Auctions
Exit 249 I-80
Iowa City, Iowa

Theme: Mesozoic Era

Keynote Speaker: Phil Currie

Topic: TBD

NOTE: Hotel Show moved to Clarion Hotel

DUES INFO

Please send your 2016 MAPS dues to:

Dale Stout
2237 Meadowbrook Drive S.E.
Cedar Rapids, Iowa 52403

Contributions to Digest Needed

The Digest editors encourage the members to submit articles for publication in the Digest issues. The Digest is for the members and should reflect their interests. If you have specimens that you collected and would like to share with other members or would like to describe a favorite collecting site, please write an article in Word, Times New Roman size 12 font, single spaced with one inch margins, and send to the editors. Photos and diagrams can be e-mailed separately or incorporated in the article.

John: Fossilnautiloid@aol.com

Chris: CDCozart@aol.com

Call for Papers

The theme for the **2016 EXPO** is the **Mesozoic Era**. Any paper dealing with Mesozoic geology or paleontology would be appreciated. The papers should be in Word, Times New Roman, size 12 Font, single spaced with one inch margins, and e-mailed to one of the Digest Editors by the **first week of February 2016**. Diagrams/Photos can be sent separately or imbedded in text.

John: Fossilnautiloid@aol.com

Chris: CDCozart@aol.com

About the Cover

This issue's cover features a photograph of *Zitteloceras beloitense* displaying characteristic surface ornamentation. The 3 cm long specimen is from the Mifflin Member of the Platteville Formation, Grant County, Wisconsin.

**Mid-America Paleontology Society Annual Business Meeting
April 11, 2015. Sharpless Auctions, Iowa City**

Board members present: Marv Houg, Dale Stout, Jim Preslicka, John Catalani, Chris Cozart, Tom Williams, Tiffany Adrain (scribe), Doug DeRosear, Gil Norris, Karl Stuekerjuergen.

Marv Houg called the meeting to order at 5:16 pm and introduced the Board members and Digest Editors (John Catalani and Chris Cozart).

Tom Williams (Show Chair) and Marv thanked everyone involved with the organization and running of the MAPS Expo.

Jim Preslicka read the Treasurer's report. Tiffany Adrain read the 2014 ABM Minutes. Minutes were approved.

Old business: none

New business:

Marv thanked Dan Cooper for setting up the Travelodge show. The motel show will be at the Clarion Hotel in 2016.

Marv stated that Expo is committed to being at Sharpless in 2016, but that the Board will evaluate other venues for the future.

Contributions to auctions: Vendor table rent pays for Expo rentals, advertising, security, etc. MAPS depends on auctions to raise money for scholarships. Auction revenue has declined and more/better donations are needed. There are also fewer bidders. Options are to reduce scholarships or increase table rent.

Dale confirmed that adverts for Expo are included in the Cedar Rapids Penny Saver guide, the Cedar Rapids Gazette and the Facebook page.

John Catalani motioned to adjourn the meeting. Chris Cozart seconded. The meeting was adjourned.

**Mid-America Paleontology Society Board Meeting
April 10, 2015. Sharpless Auctions, Iowa City**

Board Members present: Marv Houg, John Catalani, Chris Cozart, Tom Williams, Dale Stout, Jim Preslicka, Karl Stuekerjuergen, Tiffany Adrain (scribe), Doug DeRosear.

Marv called the meeting to order at 4:50 pm.

Minutes from the February 2015 meeting were circulated. Karl moved to approve the minutes, John seconded. Minutes were approved. Jim read the Treasurer's Report and stated that the silent auction takings were down, most likely because the auction materials were not high enough quality. Marv will mention this at the Annual Business Meeting. Chris Cozart suggested that vendors be asked to donate a specimen or make a cash donation. Jim predicted that the goal of \$9,000 will not be reached.

Old Business: none.

New business:

Expo is committed the Sharpless in 2016 as cards have been printed, but Board will look into moving to a new venue and evaluate the possibilities.

Plans are to use the Clarion Hotel for the motel show venue in 2016.

Tom noted there was some “bad behavior” at the motel show.

Marv has been getting feedback from vendors.

John moved to adjourn the meeting. Meeting adjourned at 5:00 pm.

MAPS EXPO is a FOSSIL Show Marvin Houg, MAPS President

We are now about 5 months past our 37th EXPO and we are into the planning phase for next year’s EXPO. EXPO 38 promises to be one our most anticipated with the announcement at this past EXPO that Dr. Philip Currie will be our keynote speaker on Friday evening at the 2016 EXPO. Phil’s wife, Dr. Eva Koppelhus will accompany Dr. Currie to Iowa City and will be asked to also make a presentation at some time during our 3 day EXPO event. Because of the expected large attendance from MAPS members and the opening of Dr. Currie’s talk to the general public, we are looking into having his Friday night talk at one of the larger auditoriums on the University of Iowa Campus. As a side note, Dr. Currie spoke in Cedar Rapids about 10 years ago and the turnout was very large so we are anticipating a similar attendance for his talk at EXPO. More information will follow as we get closer to EXPO.

At this past EXPO I received a lot of questions and comments concerning rumors that the EXPO show format and focus was going to be changed to allow non-fossil related items to be sold at EXPO, thereby changing what has always been the theme of our show, which is that it is a fossil and fossil related show. Everyone that spoke to me concerning these rumors expressed their strong desire for MAPS EXPO to stay the way it is, which is a fossil only show. I asked many of those that did express their apprehension to write to me or email me with their concerns. As a result, I received a considerable amount of feedback expressing in writing what they had vocalized to me. Let me assure everyone that the MAPS Board has no intention of changing what has been a long standing policy and requirement that EXPO is a fossil and fossil related show only. We advertise this show as a fossil only show which makes us stand out from the literally hundreds of rock, fossil, mineral, lapidary, etc. shows which are held throughout the country. If we allow other items to be sold we literally loose our identity and become one of those hundreds of shows. As the show is now, we draw people from literally all over the country and even some from foreign countries. Changing what can be sold at EXPO would probably reduce the number attending simply because they could go to a show that is much closer to them and still be able to find some fossils there.

On another issue, for many years the MAPS EXPO show has been preceded by a separate motel show. While this show has been put on by many of the same vendors that are also dealers at the EXPO show, it is in no way connected to the MAPS show. In the past few years we have tried to advertise jointly between MAPS EXPO show and the motel show to take advantage of the few advertising dollars available to both

groups. However, understand that this is a separate show and is not under control of MAPS. Therefore the dealers for this show can sell whatever they wish and can use whatever motel they decide to use. As a side note, there will be a change in location for the motel show for 2016. The last couple years this show has been at the Travelodge Motel on North Dodge Street in Iowa City. Next year the motel show will be at the Clarion Hotel Highlander Conference Center which is just across I-80 from the Travelodge Motel. The move to this new venue for the motel show may have added to the confusion that I noted above concerning what is allowed at EXPO since there was discussion from some people that we should also move the MAPS Show to the Clarion Hotel. Having both shows at the Hotel at the same time would have resulted in MAPS losing control of the fossil only requirement for EXPO. I'm sure that this discussion fueled the rumors about changing the format of EXPO.

In summary, the EXPO Show will stay a fossil and fossil-related materials only show and there is no plan now or in the future to combine the MAPS EXPO and the hotel show.

October 11 Field trip to Coralville, Iowa

See the MAPS (midamericapaleo.org) or Cedar Valley (cedarvalleyrockclub.org) websites for the exact quarry to be visited and directions.

As happened last year there is an attendance limit of 60 people. The limit on the number of people going into the quarry is being imposed by the quarry management. While the number is fairly large - please let Marv know if you plan to attend. First come - first served but you must call or email Marv Houg ahead of time. e-mail: m_houg@yahoo.com Telephone: 319-364-2868

Meet at the main entrance to the quarry (Conklin or Klein) at 8:45 to sign in and get safety instructions. Enter the quarry at 9:00. This is a lock-in quarry; that is, the gate is locked behind us and no one can enter or leave (except in an emergency) until noon, when a group will be let out. Others can come in at that time if they are waiting at the gate. The rest of the group will leave at about 4:00. **Requirements are that you must be a member of MAPS or the Cedar Valley Rock and Mineral Society and sign a waiver. Also we are going to be enforcing strict safety requirements: everyone must have a hard hat on, a bright safety vest, and hard shoes (steel toed is preferred). No open toed sandals or tennis shoes will be allowed. Also long pants will be required, no shorts will be allowed. Some type of safety glasses and gloves are recommended.**

NO EXCEPTIONS TO THESE RULES

Please stay away from the walls at all times as loose rocks and boulders do fall and walls spontaneously collapse. This is a "hard-rock" working quarry. All field trippers must have the appropriate safety equipment. All children should be closely supervised. Possible finds include: millerite, coral heads, horn corals, brachiopods, bryozoans, trilobites, crinoids and maybe cephalopods, fish parts, blastoids, and cystoids. Useful tools include: rock hammers, cold chisels, sledges and pry bars. Bring your own water and lunch. To save time, download and fill out the club liability waiver at www.cedarvalleyrockclub.org Contact Marv with any questions: m_houg@yahoo.com

NOTE: If you do not have the safety equipment - you DO NOT go in. All safety equipment must be worn at all times while in the quarry!

An Interesting Fossil Occurrence

John A. Catalani

While visiting a fossil dig in southwest Wisconsin, I and another collector visited another quarry in the area. I had collected at this quarry before and had found a reasonable number of nautiloids. This time, there were fewer nautiloids but the ones we found were larger (some type of *Endoceras*), not that well preserved (weathering for a bit and often disarticulated), but seemed to be oriented in the same direction. Later that afternoon, I returned to the quarry and the owner stopped by and indicated that others have collected the



Fig. 1. Imprint of nautiloids with present- and paleo-north shown.

pit (and she was OK with that situation). After she left, I found additional examples of these larger nautiloids and one interesting imprint (Fig. 1). A previous collector had taken a nautiloid and left the imprint. What they missed was that next to it was another, slightly larger and very poorly preserved specimen. When removed, a double, parallel imprint was revealed. I excavated this imprint and considered it my find of the day. However, before bringing it to the car, I turned it over and used my Brunton to determine north and marked this on the slab--the imprints were oriented ENE/WSW. But that is the orientation today. What was the orientation when they died on the Late Ordovician seafloor? The latest paleogeographic reconstruction shows that most of Laurentia was between 0° and 30° south of the paleoequator and severely tilted (Fig. 2). When this reconstruction is taken into account and the slab is rotated to approximate its Late Ordovician orientation, the imprints trend SSE/NNW. Since these animals probably lived on the shelf, it is possible that the imprint trend reflects the prevailing winds because in the Late Ordovician Laurentia was in the SE Trade Wind Belt--an interesting speculation to be sure.

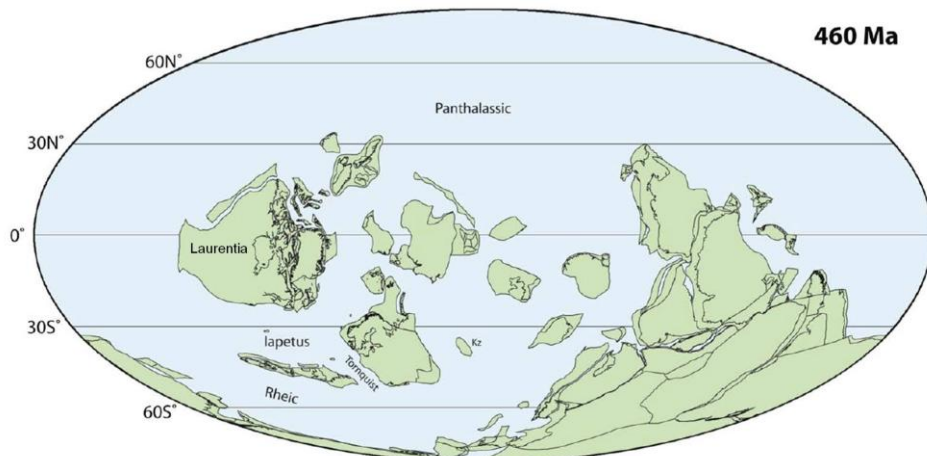


Fig. 2. Late Ordovician paleogeography (Torsvik and Cocks 2013).

Reference

Torsvik, T. H. and Cocks, L. R. M. 2013. New global palaeogeographical reconstructions for the Early Palaeozoic and their generation. In, Harper, D. A. T. & Servais, T. (eds), *Early Palaeozoic Biogeography and Palaeogeography*, Geological Society, London, Memoirs, 38, 5–24.

The Metamorphosis of an Amateur Claudia M. Faith



**The fossil that started
the process.**

Metamorphosis is the process of transformation from an immature life form to an adult form.

In 2012 on the Bouie River in Mississippi I turned over some gravel and found several unidentifiable invertebrate fossils. Upon returning to Minnesota I e-mailed MAPS member John Catalani photos of the specimens. He immediately identified one as the internal cast of an adult brachiopod (shown above) from the Silurian Period. With that eye-opener, I knew I had a brachiopod. But I pondered: 1) how did Silurian rocks show up in Mississippi, and 2) were the numerous other unidentified fossils also brachiopods, possibly in various stages of metamorphosis? My fossils begged these and other questions. Three years later, with my conjecture tempered by the knowledge and direction of patient paleontologists, the answers came via Denmark.

Brachiopods have had a lengthy existence from the Lower Cambrian Period, 500 million years ago to the present. Paleontologists have recognized 350 species currently thriving and 12,000 extinct species. Relying on the study of living specimens, zoologists have diagrammed the metamorphosis of the articulate brachiopod through the larval stage to the moment when the ventral and dorsal mantle lobes begin secreting mineralized shell material. I was told by paleontologists that this first formed shell material can be evidenced only under high optical magnification, and that my specimens appeared to be cross-sections of internal shell features of silicified brachiopod shell material. OK.

But...How did Silurian fossils show up in Mississippi?

The fossiliferous rocks I collected were in riverside gravel sixty miles north of Biloxi, Mississippi. The gravel was river-worn, clean, somewhat polished and composed of jasper, honey brown chert, calcite and

quartz. Fossils included molds, casts, and cross-sections of brachiopods, various corals, crinoids, bryozoans, a few trilobites and gastropods. A return trip to the area in 2014 provided a few more adult brachiopod casts and other baffling fossils like the 2012 specimens.

Geology precedes fossils. The Mississippi Office of Geology confirmed that the gravel was at least 439 million years old and from the Silurian Period, while the bedrock of Mississippi is Miocene Marine, only 5-26 million years old. I researched the state's geology and found that three major river transport systems delivered the fossiliferous gravel from Tennessee, Alabama's Appalachians, and the Midwest beginning in the Late Cretaceous Period, 93.5 million years ago. This supported John Catalani's identification of the Silurian cast which had washed into Mississippi along with the other Paleozoic gravel. Then, with the help of my handy National Audubon Society Field Guide to North American Fossils, I placed the more intact brachiopod specimens in the Orders Orthida, Strophomenida, Pentamerida, and Spiriferida, and found that most of my specimens originated in the Silurian in Tennessee and the Appalachians.

But...Did these fossils reveal that brachiopods experience more than one metamorphosis?

Because the fossils (yet unidentified to my satisfaction), appeared to fall neatly into three groups of complexity, I conjectured that each group represented a life-altering transformation after the larval metamorphosis. Each transformation moved the juvenile toward adulthood. I grouped the fossils by complexity to assure that I had a sufficient number of each to constitute a distinct stage of life.

These are examples of the simplest Mississippi brachiopod fossils found in the gravel. They averaged 6-15 millimeters wide.



I asserted that at the juncture of the arched line with the intersecting vertical line, computer imaging or slicing technology would expose the minute umbo. The umbo area houses the beginnings of shell growth, the dorsal and ventral valves, and the internal hard parts. I thought that these simple fossils exposed the first visible transformation following larval metamorphosis. With a few fossils, the shell had broken away from the internal hard parts revealing that these simple brachiopod fossils were 3-dimensional as were their larval predecessors.

Fossils of increased complexity took brachiopod development to the next level of maturity:



It appeared that as the brachiopod 'metamorphosed' the space to the right and left of the intersecting vertical line thickened. The fossil outline also deepened and widened revealing the sides of the valves which seemed to 'grow out' of the matrix as additional shell material was deposited. The fact that each valve had

two mantle lobes and a median septum became clear as the fossil's complexity increased. Following three years of puzzling over these shapes, I concluded that after larval metamorphosis the articulate brachiopod experiences additional events of transformation leading to adulthood, and that this theory was borne out by my specimens.

Then in 2015...Kaboom!!

Plate 10 in Circular 7 of the Mississippi Office of Geology displayed fossils clearly like my specimens. This was the first time I had seen in print any reference or pictures of the fossil shapes I had been struggling with! They were identified as cross-sections of pentamerids from the Silurian Period. I was told they were obtained during thin section petrology by placing a fossil in bioplastic then slicing.

I turned to a professor at the University of Kansas. Sensing my question was evolutionary biology based, he linked me with biomedcentral.com and the current work of Claus Nielsen at the University of Copenhagen. Nielsen explained the process where individual organs develop within the newly formed embryonic germ layers. (Brachiopods are bilaterian with an ectoderm, mesoderm, and endoderm.) Each germ layer gives rise to organs and tissues in the developing embryo. In other words embryonic cells are specialized. When the fertilized embryo is launched from the reproduction chamber into the sea it is a larva, the stage from hatching to metamorphosis. Therefore, at the time of larval metamorphosis all adult parts are in place to mature. Viola! No additional transformations! The answer at last!

Ironically, at the outset of this quest I had read in *Invertebrate Zoology, A Functional Approach*, "...the larva settles after a short free existence...and then undergoes metamorphosis...and the adult structures develop from their larval precursors" (Ruppert et al. p. 828). I guess the harder this amateur pushed the envelope, the more it remained stationery.

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- Ruppert, E.E., Fox, R. S., and R. D. Barnes. 2003. *Invertebrate Zoology, A Functional Approach*, Brooks Cole, 7th ed., 1008 p.

Wikipedia/Brachiopod/References.
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Surviving the Effects of a Fossil Induced Curiosity Attack

Gary H. Burgess

Have you ever been struck by a “curiosity attack” while on a field trip? I was—by a small fossil gastropod in Montana.



Plate 1. Photo of Central Montana Valley view of *Lunatia subcrassa* site area. (All photos by Gary Burgess.)

I was participating in a survey of the Eagle Sandstone formation in central Montana during July 2015 when it struck. The survey started for me that morning when team leader Joe Small immediately pointed out a group of exposed gastropods.

Being a marine invertebrate fossil collector and enthusiast, I became that subject specialist on this survey. I photographed the fossils, took some notes, and collected some specimens for study. Some were well preserved and easily removed from the fine mudstone matrix, while others were broken or crushed. While I have collected gastropods from central Montana before, this was the first time I had seen this species there.

By the time I completed my examination of the site my curiosity alarms were going off rapid fire! What is this species? Is it an index fossil? Who may have discovered it? Has this species been studied? What formation is this? Where else was it found? Is the environment fresh water, marine, or brackish? When did this species first appear? When did it vanish?

I had just been struck by a curiosity attack! These questions relentlessly entered my mind for the rest of the trip. I knew that there was only one cure for this insidious attack. I had to find the answers to these questions constantly nagging me!

I began my search as soon as I returned home. On examination of the gastropod, I noticed the first obvious trait was that the shells were thin and delicate, thus indicating to me they were possibly fresh water gastropods. The second clue was the distinct growth lines in the shell. The growth lines turned out to be a helpful diagnostic feature. The small size, short spire, and aperture shape all added clues to aid me in identifying the source of my “curiosity attack”.



Plate 2. Photo of *Lunatia subcrassa* field site.



Plate 3. Photo of single *Lunatia subcrassa* in the field (magnified).

My first task was to identify this mystery gastropod. I knew the area we surveyed was Late Cretaceous in

age, so I started by reading a report titled, Upper Cretaceous Gastropods from the Pierre Shale at Red Bird, Wyoming by Norman F. Sohl, 1967 (Ref. 1). Here I found a visual match to my gastropod on Plate 1, figures 22-26. I was feeling the excitement of discovery! It was identified as a *Lunatia subcrassa*, (Meek and Hayden 1860). The specimens shown in this report were collected from the Timber Lake Member of the Fox Hills Sandstone in Corson County, South Dakota. This answered my first question. My search had started well.

Next was to find out if it was an index fossil. Checking my copy of Index Fossils of North America, 1972 (4), I was able to confirm my initial identification of the gastropod as being a *Lunatia subcrassa*. The publication also answered my question about it being an index fossil, for it is listed there by Shimer and Shrock as existing only during the upper Cretaceous. Question two answered, my confidence building, I continued on to the next question.



Plate 4. Photo of *Lunatia subcrassa* with ruler

As for who discovered it, some on-line research revealed that *Lunatia subcrassa* (Meek and Hayden 1860) was first described by Fielding B. Meek (1817-1876). Who studied *Lunatia subcrassa*? Meek also studied *Lunatia subcrassa* thoroughly, as is evident by his detailed description in the publication Academy of Natural Science, Philadelphia, VIII, 67, 1856 (2). Meek's description of *Lunatia subcrassa* closely matched my specimens, lucky me.

Fielding B. Meek's description appears again in "A Report on the Invertebrate Cretaceous and Tertiary Fossils of the Upper Missouri Country by F. B. Meek; 1876" (3). This massive report of 878 pages (some blank) represents Meek's research in the Northwest from 1854 through 1860. Meek grew up suffering from health problems such as deafness and tuberculosis, yet still managed to become a paleontologist, mostly through self education of the natural sciences. In 1858 he became the Smithsonian Institution's first full time paleontologist. A position he held until his death due to tuberculosis on December 21, 1860. This information answered questions three and four. I was on a roll.

I suddenly hit a speed bump! Upon reading a report titled "Revision of The Gastropoda of The Fox Hills Formation, Upper Cretaceous (Maastrichtian) of North Dakota" (19) by J, Mark Erickson, June 14, 1974; I found a new name for my fossil. It was renamed by J, Mark Erickson as *Euspira subcrassa* (Meek and Hayden 1856). Erickson reassigned the species *subcrassa* to the Genus *Euspira* after he closely studied it. Erickson, giving credit to Meek, pointed out that Meek correctly stated in his original description of 1856 (2) that "It is possible that the names of this and the preceding species may have to be changed to *Euspira subcrassa* and *E. occidentalis*; that is, if *Euspira* is made to replace *Lunatia*, as already suggested." Genus now clarified, I proceeded to the next question.

Answering the question of what formation I found it in, involved simply checking the 2015 Montana

Geologic Map, which showed our 2015 Survey’s *Lunatia (Euspira) subcrassa* site was located in the Judith River Formation. This is in agreement with the 1918 report by Arthur J. Collier (17) that stated *Lunatia subcrassa* was found in the Judith River Formation of Montana.

Now, finding out where else *Lunatia (Euspira) subcrassa* has been found took a lot more research. Surprisingly, there were multiple reports regarding *Lunatia (Euspira) subcrassa* on-line. Unfortunately—most of them were very old, with the bulk of them dating from 1856 to 1920. I think I opened a can of worms with this search.

While *Lunatia (Euspira) subcrassa* was repeatedly reported to have been found in the Fox Hills Formation (5); it was also reported to be found in the Lance (7), Pierre Shale (5), Bear Paw Shale (1), Judith River (17), Eagle (10), Mesa Verde Group (11), and Clagget Shale Formations (8). The newer reports occasionally gave conflicting information compared to the older reports as to what formations existed in the same area *Lunatia (Euspira) subcrassa* was located in.

Fortunately, I found a 1968 report by Karl M. Waage (9) on the Fox Hills Formation that helped resolve some of my confusion. The chart in Figure 1 helps clarify some of the discrepancies in the Stratigraphy of South Dakota described in the old reports.

While this chart does not list the Clagget, Judith River, or Bear paw Formations, they are all mentioned as having *Lunatia subcrassa* found in them (8). The Clagget Shale is overlain by the Judith River formation, which is overlain by the Bear paw Shale in Central Montana (8). All three of these formations are contiguous with the Pierre Shale located further east, according to the 2015 Montana State Geologic Map (16). I found additional references listing *Lunatia (Euspira) subcrassa* as also being found in North Dakota (9), South Dakota (10), Colorado (9), New Mexico (11), Wyoming (1), and Canada (12).

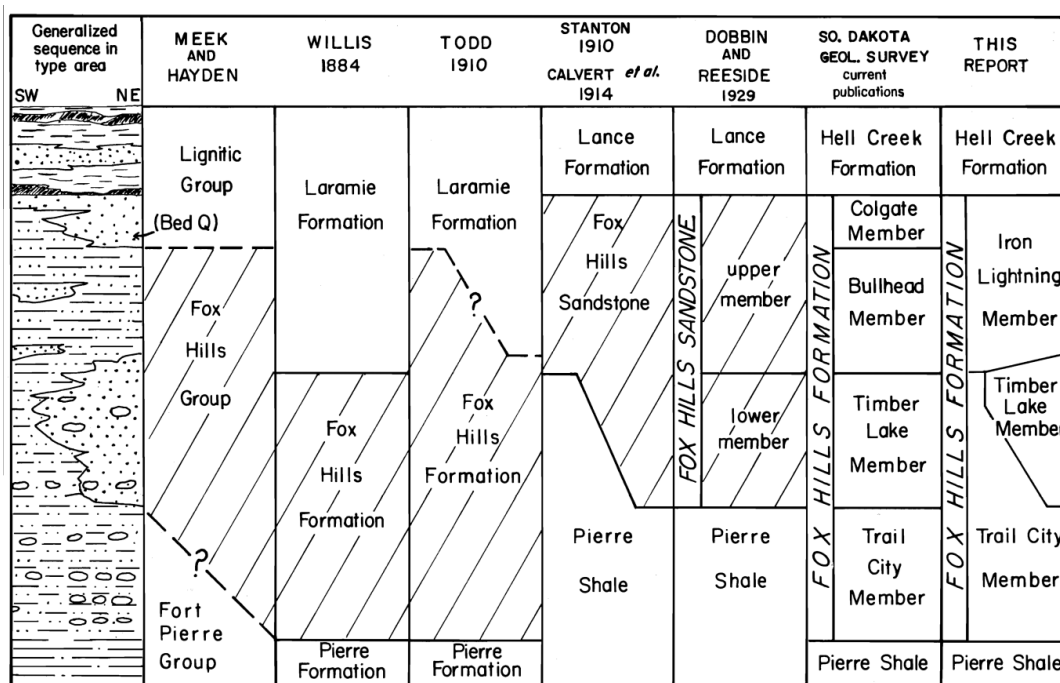


Figure 1. Development of classification and nomenclature of the Fox Hills Formation in the type area 1968 by Karl M. Waage (9).

Searching for the answer to *Lunatia (Euspira) subcrassa*’s environment produced one listing of it being

found in brackish water (14). However, all the other reports listed it as being found in a marine environment. Given its thin, delicate shell construction, I initially found it difficult to believe that *Lunatia (Euspira) subcrassa* could have survived in a marine environment. The matrix I found it in consisted of finely graded mudstone, with no obvious indicators of a marine environment. However, I failed to find any documentation to support my idea that it existed in a fresh water environment. Dejected—I accepted it as a marine creature and moved on.

Now, on to my final two questions! When did it appear? Based on my research, my estimate of when *Lunatia (Euspira) subcrassa* first appeared was early in the Eagle Formation (10), for this was the earliest period that I found it reported in. When did it disappear? I believe it disappeared at the end of the Lance Formation (7), for this is the latest period I found it reported in.

Finally done! I feel relieved and satisfied that I have answered all the questions I incurred in my “curiosity attack” of July, 2015. I now know the source of my attack as *Euspira subcrassa*, a marine gastropod listed as an index fossil. It existed during the Late Cretaceous along the western side of the Interior Seaway. *Euspira subcrassa* was discovered, studied, and described by Fielding B. Meek in 1856, and found again by me in the Judith River Formation of Central Montana in 2015. Feeling cured, I can now put this quest for knowledge behind me.

However—I spotted an unfamiliar clam encased in a concretion with gastropods and oysters that is tickling the back of my mind. Could this be a precursor to another curiosity attack? I will soon find out.

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