

May 2022



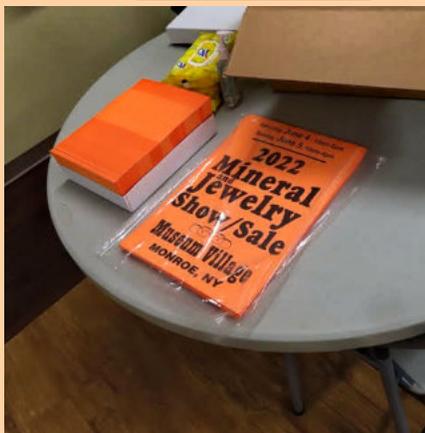
OCMS SHALE MAIL



**Welcome to an in-person meeting Friday
May 13th, 2022 at 6:30 pm!**

See you at: 81 Laroe Rd Chester, NY (Town of Chester Recreation Senior Center), (From KINGS HWY, Turn left on Laroe Rd by UPS office building)

[CLICK FOR MAP](#)



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Mailing Address:

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President's Message & Minutes!

By: Mike Tedford

Two Just one month until our annual Mineral Sale and Show at Museum Village! Please share your ideas for running a successful show June 4 & 5, 2022. Also, please contribute your ideas for updates, activities, posts, shares and likes for our OCMS Shale Mail, website OCMSNY.org or <http://www.orangecountymineralsocietynewyork.com/> and facebook page Orange County MineralHome Society of NY. Please like and share our pages and mention our website in your posts to build awareness. We had a discussion at our meeting regarding including the word SALE in our advertisements to attract shoppers and buyers. You will not find a more scenic location for an outdoor mineral sale than Museum Village in June!

Please join our OCMSNY May 13 8, 2022 meeting at the senior center this Friday. We are planning a full-scale live meeting following the senior center guidelines. The agenda includes Annual Show discussions, committee reports, old business, new business, refreshments and a mineral raffle. Thank you, Thank you Dr Alex Bartholomew, geologist at SUNY New Paltz for presenting "The Concept of Fossil Species," an understanding of species from a biological perspective and also how Paleontologists define a fossil species and what that means. Details are found in this issue. I shared some interesting historical information with some of the officers gathered by a doctor in upstate NY, whose great, great, great, great grandfather was an ardent mineral enthusiast in Orange County in 1830's. She has entrusted a sack full of letters to him from many of his fellow mineral enthusiasts. We hope to find a great way to share the info and preserve the history. WE need your varied experiences to try and find the experts to preserve the letters among possibly historical societies, libraries, document storage... Please share your thoughts. See you Friday.

Minutes

Meeting hall and OCMSNY attendance sheets were completed, Name tags were issued.

Chester senior center COVID 19 precautions were observed including sign in, hand sanitizers, social distancing, and some attendees wore optional masks.

Meeting preparations included refreshments and the hybrid live meeting with zoom component. Thank you Mark Kucera.

The mineral book and journal swap table and the 16 raffle specimens were set out.

Thank you, Mark Kucera, for again achieving a satisfactory zoom,

OCMSNY president Mike Tedford called the meeting to order at approximately 6:40 PM, welcoming the attendees. Meeting attendees introduced themselves.

Mike Tedford introduced the mineral book and journal table for free use, borrowing or swapping by members.

Members confirmed they are receiving the emailed Shale Mail, and accepted the minutes therein.

Ron Nelson read the balances of the main checking account and show account. The Treasurers report was accepted.

Ron Nelson reported the Annual Mineral Show and Sale June 4 & 5, 2022 at Museum Village continues to increase in vendor registration. Updated Sale and Show flyers were distributed to members. Our website and Facebook page continue to be updated. Members were reminded to like, post and share posts on facebook to increase our visibility and attract vendors and shoppers. Also, please review and suggest any more updates. Thank you.

Ron Nelson has continued efforts to reserve the Chester barbecue pavilion and senior center kitchen for our rock barbecue on the Saturday following Labor Day weekend, We were reminded we will not have a meeting or speaker June 10 following the Mineral Show and Sale.

Discussions ensued on possible club hat and shirt colors to be ordered. Many like blue. Orange was another popular suggestion. We would like the orders placed in time to have items on sale at the mineral show.

Thank you to Dr. Alex Bartholomew for presenting the theories of species definition with the goal of understanding the recent articles and interest in several separate species of T Rex. These are based on relatively few and incomplete fossilized specimens over a span of millions of years.

This business portion of the meeting adjourned around 7 pm for the presentation, refreshments and subsequent raffle.

The mineral raffle included 18 unique items, and was enjoyed by many members.

Important Notice!

STERLING MOUNTAIN RAILWAY

By: Doc Bayne

As many of you became aware at the April meeting, hybrid meetings have come to an end. I know that for some of you Zoom is the only way you can attend our meetings. We are heart broken but unless someone with both the equipment and the expertise steps up we are not able to conduct the zoom part of our hybrid meetings any more. If you are able to be of service in this area please contact Mike Tedford at mted@frontier-net.net

As you know Mark Kucera has been stepping back from his duties for the past few months. Mostly due to the travel time to get here. We would like to take this opportunity to thank Mark for his many years of service to the Orange County Mineral Society.



I hope to see you all at the May 13th meeting!



The Sterling Mountain railway operated from 1865 to 1923 carrying ore from Lakeville at the foot of Sterling hill, to Sterlington Station, at Sterling



Junction just south of present-day Sloatsburg. Join local historian Doc Bayne as he traces the history of this integral part of the iron history at Sterling.





The Concept of Fossil Species!



We want to thank Dr. Alex Bartholomew for coming to see us on April 8th. His discussion on the concept of fossil species was both interesting and informative.

When discussing animals or plants or any organism it's called binomial nomenclature. This is just a fancy way of saying everything gets 2 names. A genus name is kind of like a family name; for me it would be Bartholomew. A species name is their individual name; for me it would be Alex. Paleontologists like to use Latin terms to name and describe things. If you ever see or here the suffix "ensis" on the name of a fossil it means it's from that area. A new species of fossil was found in a drawer at a field museum so when the fossil was named the suffix "ensis" was used to indicate it was found at a field Museum in a drawer. There is a worm that lives in the water column off Monterey Bay that looks like a pig's backside so, they named it polychaete which in Latin basically means pig rump.

Typological Species Concept:

- Typological Species Concept states that one species can be segregated from another species based upon physical features and that species can be recognized by their distinctive morphologies
- Issues:
 - Sibling Species: things may actually be different species, having come from similar ancestral stocks, but actually be different species (Gemini Species)
 - Sexual Dimorphism: Individuals within the same species develop strikingly different morphologies
 - Age Dimorphism: Species morphology can change as they age (e.g.: butterflies vs. larve)
 - Multiple body parts: Organisms may be split into multiple species based upon the finding of individual parts of the body (e.g.: Plants...stump, bark, twig, leaf)



They do try to be descriptive with the names but they call the species the fundamental unit of biological classification and evolution. Changes within groups of organisms happen at the species level. The species are all the kinds of individuals that can interbreed with one another, and they have genetics which are the nuts and bolts upon which evolutionary processes act.

Paleontology is a little different because your dealing with a whole group of extinct organisms so they can't breed. Therefore paleontology is what you can observe only.

When dealing with or observing species there are similarities but often differences. You have to be careful because sometimes the different characteristics may transpose organisms into there own species.

Microevolution is a study of genetics which studies populations and species through time. Macroevolution is a kind of core scale that paleontologists can look at changes through time and across global populations.

The best chance at making a healthy life is going to be the organism that has the best chance of passing on their part of the gene pool. There are different ways but it comes down to reproductive isolation where some little part of the gene poos gets shunted off to the side. In a large gene pool it's kind of hard to stand out but reduce the numbers and any potential characteristic makes you better than the other guy. In that scenario you have a chance of changing and passing on your uniqueness to newer generations leading to new species forming.

There are different ways we can reduce the amount of competition. We call these sympatric and allopatric speciation and the differences are whether there's some actual geographic barrier or there's some kind of behavioral barrier.

NATIONAL GEOGRAPHIC PLANET POSSIBLE LOGIN



For more than two decades, the Field Museum in Chicago has displayed a Tyrannosaurus skeleton nicknamed "Sue." Now, a provocative new study argues that Sue is not actually T. rex but rather a related species named "Tyrannosaurus imperator."

PHOTOGRAPH BY MARK WIDHALM, FIELD MUSEUM LIBRARY VIA GETTY

SCIENCE

Should T. rex be 3 species? New study sparks fierce debate.



The Concept of Fossil Species - Cont.



This leads us to hybridization, according to the biological concept, two species cannot interbreed. However, they figure a horse and a donkey bred producing a mule. There is enough genetic separation they could make a baby that will live but, a big enough difference that it will be sterile. They have also found that zebras and horses have bred together and tigers and lions too. They are able to reproduce so this is where morphology and genetics comes in.

When we sink back into paleontology, we're like geez, are those trilobites really different species? We will never know. We just have to live with the fact that we deal with Mac revolution. Like I say my primary research tool is a hammer, right?

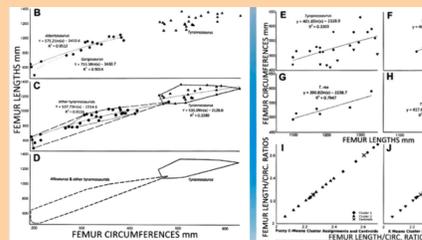
When Alex compares with his biology buddies they discover they can do different things with what they have. Hybridization is kink of this cool thing that really is the fly in the ointment of paleontology. So, how does this relate to what he wanted to talk about with T Rex.

Here is Sue. She is a super complete skeleton from the field Museum in Chicago, she could be the most famous one out there too. We know she's a tyrannosaur, but is she really Tyrannosaurus Rex? So, this paper was published on January 28th. They said, tyrant, lizard, king, queen and emperor. Multiple lines of morphology and stratigraphic evidence supports subtle evolution and probable speciation within the north. American genus tyrannosaurus well, is a lot of fancy words saying they think there are more than one species of tyrannosaurus fossils.

Sue is really an amazing fossil. There are only a few bones missing, it's got a big head and all its great teeth. Sue has tiny arms and a big belly. What it comes down to though is the femur and the teeth at the front end. This is the bulk of their data, they say over time all tyrannosaurus fossils have been deregulated into the species Rex, which means tyrant lizard Tyrannosaur Rex. King.

They made a really ballsy move in the paper they wrote by calling them a trash basket species. What's a trash basket species? It means its T Rex, there is only one species in tyrannosaurus, right? So, nobody ever really takes the time to look at it and say, is it really different or is it the same and so trash basket is a term that's a bit disparaging to all the people who worked on T. They accuse them of not doing the work because its apparent that the species are different. Some people have attributed these differences to age. Juveniles are more slender while adults tend to have stouter, bigger bones. This is based on small number statistics. We don't have enough specimens of Tyrannosaurus Rex to make a good determination either way.

What they did is went back to every Tyrannosaurus fossil they could find and took measurements of femurs and incisor teeth.



Tyrannosaurs species?

- Variation in dentary
 - First incisor is usually small
 - Second incisor may be small (*T. imperator*)...
 - Or big (*T. rex*)

Fig. 3 Tyrannosaurus anterior left dentaries in occluding different proportions of the first three incisors. A) *Tyrannosaurus rex* (morphotype I) (CM 9300, 16.5 years); B) *Tyrannosaurus rex*? (RSM 2523.8 (7.8)); C) *Tyrannosaurus rex*? (morphotype II) (CM 55000, 16.1); D) *Tyrannosaurus rex*? (morphotype III) (USNM 555000 (6.1)); E) *Tyrannosaurus rex*? (morphotype IV) (FMSH PR2081 (7.8)); F) *Tyrannosaurus rex*? (morphotype V) (USNM 55027 (6.8)).

Results:

- Skeletal robusticity is consistent WITHIN specimens, but is NOT correlated with
- *Tyrannosaurus* femur proportions DO show unusual levels of variation
- Gracile (skinny, not stout) specimens are stratigraphically limited
- Incisor dentary tooth arrangement correlates with femur robusticity and also to change with time
- Data do not fully support any of the four proposed hypotheses, but it does significantly favor multiple species over the others

Tyrannosaurus morphotype I:
Stratigraphically low, robust femur, usually two incisors. *Tyrannosaurus imperator*

Tyrannosaurus morphotype II:
Stratigraphically high, robust femur, reduced incisor dentary. *Tyrannosaurus rex*

Tyrannosaurus morphotype III:
Stratigraphically high, gracile femur, only one incisor dentary tooth. *Tyrannosaurus regina*

Fig. 1 Tyrannosaurus known bone profile skeletons to same scale, but equal 2 to 3. A) *Tyrannosaurus rex* holotype (morphotype I) (CM 9300 (16.5 years)); B) *Tyrannosaurus rex*? (RSM 2523.8 (7.8)); C) *Tyrannosaurus rex*? (morphotype II) (CM 55000 (16.1)); D) *Tyrannosaurus rex*? (morphotype III) (USNM 555000 (6.1)); E) *Tyrannosaurus rex*? (morphotype IV) (FMSH PR2081 (7.8)); F) *Tyrannosaurus rex*? (morphotype V) (USNM 55027 (6.8)).

June Shows!



Orange County Annual Gem, Mineral, Fossil and Jewelry Show @ Museum Village

Saturday, June 4, 2022, 10am-5pm – Rain or Shine

Sunday, June 5, 2022 10 am to 4 pm – Rain or Shine @ Museum Village * 1010 Route 17M * Monroe, NY 10950

Special Admission For Show and Museum

Adults – \$5.00 Seniors – \$3.00

Scouts in Uniform & Kids Under 12 Free

FREE Gift for kids 12 and under

*** THIS IS AN OUTDOOR EVENT ***

65 Vendors, Fun For The Entire Family

There will be lots of things to do

Immerse yourself in all things rock, mineral and fossil related

Featuring: Artisans, Craftsman, Collectors, Dealers and Exhibitors

On display: “Harry” The Most Complete Mastodon found in Harriman, NY

Extensive Local Mineral Collections

Exhibits * Demonstrations * Educational Displays

New Fluorescent Mineral Display

Kids Games and Pet Rock Projects

Food and Refreshments available for purchase

* FREE PARKING *

The food vendor at the show will be Dogfella’s

Hello,

I am emailing you to inform your club that the 2nd Annual South Jersey *SUMMER* Gem, Mineral, Fossil, & Jewelry show will be held in Cherry Hill, New Jersey this upcoming June. We hope that you find this information exciting and that our show can find a spot in your clubs’ calendar of events or newsletter.

The information for the show is as follows:

2nd Annual *SUMMER* South Jersey Gem, Jewelry, Mineral & Fossil Show

Date: June 12, 2021

Location: 1721 Springdale Road Cherry Hill, NJ 08054

Show Times: Saturday (6/11/22) 10:00 am - 5:00 pm (Saturday Only) (Outdoor Only)

*Rain Date: Sunday (6/12/22) 10:00 am – 5:00 pm (Outdoor Only)

Website: www.sjmineralshow.com

Facebook: www.facebook.com/sjmineralshow

Again, we hope you are able to inform your club members of our show. Thank you for your time.

Regards,

Alan & Elise Benson

Quincy Mine & Smelter

By: Keith Chip Allen

If you are looking for a unique vacation, not only does the Upper Peninsula of Michigan offer nature's beauty at its finest, but you can learn and feel what life was like during Michigan's Copper Mining rich history. One of the best of many, the Quincy Mine and Smelter will give you a true sense of the copper glory days. Today, this is part of the Keweenaw National Historical Park.



The Quincy Mine offers both surface and underground tours. The #2 shaft house contains a



museum and self guided tour of the structure. The No. 2 Shaft (and Rock) House was completed in 1908 and was used until 1931. The Nordberg

Steam Hoist, the world's largest steam-powered hoist engine. Completed in 1920, this hoist made it possible for the Quincy Mining Company to extend its No. 2 Shaft 92 levels underground, an inclined distance of nearly two miles. The underground tour begins with a nearly one-half mile walk through the historic East Adit (1895). Seasonal Tours are also available of the Quincy Smelting Works, located on the waterfront of the Portage Canal.

For over 100 years, men ventured deep into mineshafts to reach the valuable copper deposits of Michigan's upper peninsula. The copper that passed through the Quincy Mining Company's candlelit No. 2 Shaft in the 19th century might have become a button on the uniform of a Civil War soldier, a wire for one of the first telephone poles, or part of the early electrical grid.

The workers who settled in the mining towns of "Copper Country," the Keweenaw Peninsula on Lake Superior, came from a variety of different ethnic European backgrounds, including Italian, Finnish, Slavic, German, Irish, and Cornish. Mining companies attracted immigrants to this sparsely populated area with its company towns, where there were houses, hospitals, libraries, and schools ready to be filled.

The small Keweenaw Peninsula in the Upper Peninsula was one of the best places to mine for copper in the United States during the late 1800s and early 1900s. It was profitable because the copper of this area occurs in a pure metallic state and because there was a lot of it. Keweenaw is a stretch of land fifty miles long and fifteen miles wide, that lies at the northernmost tip of Michigan as it juts out into Lake Superior. The area is known as "Copper Country."



Quincy Mine & Smelter - cont.

The Quincy Mining Company formed in the Keweenaw Peninsula in 1846. The company built its own facilities for processing the copper from start to finish. It also built houses and community buildings for company employees and their families. It had a rough start, but the mine was successful and Quincy grew. Maps of the Quincy Mines that were made in 1892, 1902, and 1920 show more development of housing and transportation between the shafts and the various mill buildings owned by Quincy.

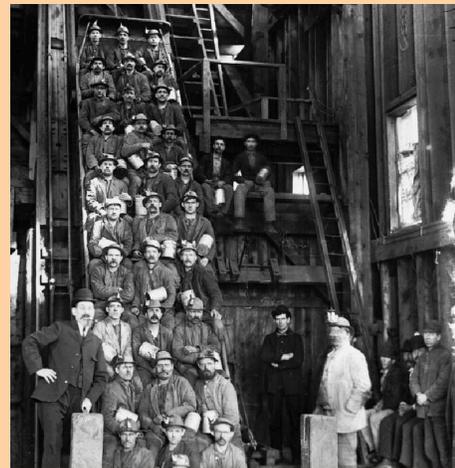


Quincy Mining struggled during its first ten years to make a profit. In 1856, the company was saved when a neighboring mine discovered a copper deposit on the Keweenaw Peninsula that was about 12 to 15 feet thick at the surface. This deposit ran through land Quincy owned and the company began to mine it. The Keweenaw mining industry grew and the region became known for its copper. Michigan produced more copper than any other state in the U.S. when the Civil War started in 1861. At that time, almost 90% of America's copper came from Michigan and over half of Michigan's copper came from the Quincy Mine.

During the Civil War, production of copper briefly fell but not enough to stop the mining business. People still needed copper. By 1862, the company produced 2.1 million pounds of refined

copper. This level of production allowed the mining company to start paying back the investors who first supported the business. Mines like Quincy supplied the raw material that was shipped to factories and then used to make brass buttons, copper canteens (small containers that hold water), bronze cannons, and ship-building materials. Between 1862 and 1868, the Quincy Mine produced more copper than any other mining company in the country.

People at Quincy Mine called the company "Old Reliable" because it was so successful. The company paid stockholders every year between 1868 and 1920. When the mine peaked in 1910, it had produced about 458,000,000 pounds of copper.² Part of the success of the mine was the advancement in technology. Copper mining technology improved over the years since the mine opened in 1846. Mining at Quincy began with men using drills powered by hand and black powder (gunpowder). By the 20th century, a single man could operate a drill by using air pressure, explosives, electric locomotive hauling tools, and steam-powered tools. In 1930, the mines at Quincy were the deepest in the Western hemisphere. The deepest mining shafts -- measured on the incline, not surface to bottom vertically -- went over 9,000 feet. The No. 2 Shaft was the deepest mine in the United States by 1931.



Quincy Mine & Smelter - cont.

The price of copper began to fall in 1920 and the company's profits fell, too. Quincy stopped producing copper in 1931 because of the Great Depression. During the Depression, industries all over the country slowed down. This meant that factories did not need to buy as much copper as they did before the economic crisis. The Quincy Mining Company reopened in 1937 when prices rose and Quincy stayed open to supply Allies with copper during World War II. Even though it reopened, its boom years were over. By 1943, Quincy opened a reclamation plant to process "stamp sand." Stamp sand is gravel created when workers mill ore. It contains small pieces of copper. Because less copper could be mined from underground by this time, Quincy Mine workers began to turn this sand into copper ore. When the war ended, the mine had paid out \$27 million back to its investors and produced 848,000,000 pounds of copper. Quincy stopped mining copper in 1945, but the reclamation plant continued to produce copper until 1967.

The Quincy Mining Company built the Quincy Smelting Works on the banks of the Portage Canal in 1898. Quincy constructed the smelter to refine and ship its own copper, as well as to accept custom work from neighboring mining operations. Quincy started with several sandstone furnace buildings and support structures, and then added additional buildings as technologies changed over time. With the decline of the

industry after World War II, however, the local sources of profitable copper diminished to the point that it no longer made sense to keep the facility open. Quincy closed the smelter in 1971. Fortunately, rather than scrap the facility, the company locked the doors and left the complex intact.

Though the site decayed over the years, the smelter remained a unique and special place. In 1978, the Historic American Engineering Record documented the smelter complex in its study of the Quincy Mining Company. Due to the integrity of the historic resources at the site, the National Park Service (NPS) then included the complex in the Quincy Mining Company National Historic Landmark District, and ultimately within the boundaries of Keweenaw National Historical Park.



OCMS members are covered by Society-sponsored insurance.

OCMS Disclaimer

The editor and the OCMS are not responsible for the accuracy or authenticity of information in the articles accepted for publication, nor are the opinions expressed therein necessarily those of the officers of the OCMS or the editor.



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