Cedar Valley Gems

Cedar Valley Rocks & Minerals Society

Cedar Rapids, Iowa

cedarvalleyrockclub.org

CEDAR VALLEY GEMS | MARCH 2025 | VOL. 51, ISSUE 03

Ray Anderson, Editor: rockdoc.anderson@gmail.com

Next CVRMS Meeting
Tues. Mar. 18
7:15 pm

Hiawatha Community Center
101 Emmons St., Hiawatha - 7:15 pm

featured presentation

"3 weeks on the South Island of New Zealand"

by **Prof. Rhawn Dennison & Geology Students**

Cornell College Department of Earth and Environment

In January 2025, Cornell College geology students spent 3 weeks on the South Island of New Zealand learning field mapping techniques and seeing firsthand the diverse rocks of one of Earth's most tectonically active regions.

Is There a Lake in North America that is as Deep as or Deeper than Lake Baikal?

Lake Baikal in Russia is the world's deepest and oldest freshwater lake. It has a maximum depth of 5,387 feet! Its mean depth is 2,244 ft. The deepest freshwater lake in North America is the Great Slave Lake located in Canada's Northwest Territories. It has a maximum depth of 2,000 feet! But its mean depth is around 135 feet. So does not even come close to that of Lake Baikal in terms of mean depth or water volume. Here are some additional facts about the Great Slave lake: it is the second-largest lake in the Northwest Territories of Canada (after Great Bear Lake), and the tenth-largest lake in the world by area. Note Lake Tanganyika in East Africa is the second deepest lake in the world, reaching a depth of 4,823 feet, and the second largest freshwater lake by volume. Its mean depth is 1,870 feet! Thus the Great Slave lake is not ranked among the world's deep freshwater lakes when mean depth is used. Here is a pic showing the location of Great Slave Lake. Great Slave Lake is named after the "**Slavey**" people, a group of Dene indigenous people who lived near the lake's shores. Early European explorers, particularly French fur traders, interacted with Cree people who used the term "Slavey" to describe the Dene, leading to the name being translated as "Slave" in English. Due to the negative connotations of the word "slave," there are ongoing discussions about renaming the lake to better reflect the indigenous people of the area.

https://www.quora.com/

CVRMS Meeting February 18 — Minutes —

MEETING CALLED TO ORDER: 7:20 pm by Marv, president. Guests were introduced: Christina Shauger and Arthur Philips.

MINUTES FROM JAN. MEETING: motion to accept by Jeff and 2nd by Bill. Minutes accepted.

TREASURERS REPORT: checking account balance $5062.96, motion to accept by Bill and 2nd by Ray. Motion passed.

PROGRAM: ***"The Benefits of Geology Field Camp &CVRMS Supported Research at U of IA"*** *by* by Prof. David Peate & U of IA Geoscience Students. Thanks to the club for donation to support their field trips. Lots of questions especially about trilobites.

DOOR PRIZE: Sharon won the door prize, and Nichole won special one for the students.

2025 ROCK SHOW: MARCH 22-23 : Saturday night dinner includes your choice of beef or chicken, green bean almandine, party potatoes, fresh fruit and a roll, and Marv will call to see if that includes dessert. Catered price is $22. Sharon has more staff shirts for anyone that needs one. She also has flyers.

DALE ANNOUNCED that he apologizes that he forgot the name tags, but if anyone needs one let him know, and he will order one!

UPCOMING FIELD TRIPS: Laura let us know that she is working on a trip to Thunder Bay if Canada still lets us in by then.

MOTION TO ADJOURN: 9:20 pm by AJ and second by MH. Meeting adjourned.

Respectfully Submitted.
Dell James, Secretary

CVRMS Board Meeting Feb. 25 — Minutes —

MEETING CALLED TO ORDER: 7:07 pm by Marv Houg at his house. Board members present: Dell James, Jay Vavra, Marv Houg, Dale Stout, Ray Anderson, Sharon Sonnleitner, Kim Kleckner, Laura Halladay.

SECRETARY MINUTES FROM LAST MEETING: Minutes of previous meeting were reviewed. Ray made motion to accept; second by Jay; motion passed.

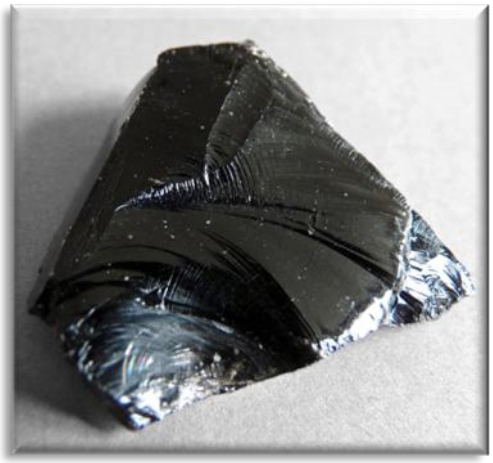
TREASURERS REPOR: Dale reported that there was no difference from the report presented at the previous general meeting.

2025 ROCK SHOW: March 22-23, Theme ***THE ICE AGE*** **. Status of dealers:** Sharon reported that all dealers are set, but 2 will be paying at the show. **A brief discussion** about loess (also known as rock flour) followed. **Marv will donate** agates, geodes and maybe a group of specimens from Iowa for raffle. **Eugene Flecher** will 3-d print a dinosaur. **Free postings** are available from Hoopla, and **Dell will call** *Collectors Journal*.

FIELD TRIPS: Lynn Thayer will let Kim know about geodes. **Laura reported** that the Haunted Ridge field trip is scheduled for May 31—June 2.

MOTION TO ADJOURN: by Jay second by Sharon. Motion approved. Meeting adjourned at 9:18 pm.

Respectfully submitted
Dell James, Secretary



A CIVILIZATION WE KNOW NOTHING ABOUT?

Obsidian is undoubtedly one of the most famous materials ever. It is a volcanic glass whose formation is due to the very rapid cooling of lava, always rich in silicate ions, which are unable to achieve the ordered formation of a crystalline lattice and assume a chaotic arrangement. However, it is a delicate and dangerous material to work with, and humans were not able to manipulate it with mastery until the Stone Age. Or at least, so we thought. Based on the latest discoveries made at the archaeological site of **Melka Kunture, in Ethiopia**, in fact, a team of researchers has described the discovery of a real "*axe laboratory"* in obsidian within a layer of sediments dated to **1.2 million years ago**. These objects are better defined as *"obsidian bifaces,"* or rather rudimentary tools that resemble the more recent axes. All of this, however, represents an incredibly early example of obsidian processing and, according to the authors of the study, it is the only similar place ever dated to the early Pleistocene. Through a series of analyses, the team then demonstrated that it was a targeted activity, and that very standardized axes were produced, being a real stone tool laboratory. The obsidian bifaces, in fact, were made by expert hands, who produced large flakes and managed to retouch them to obtain constant and repeated shapes. What amazed the researchers was the remarkable morphological standardization of the axes and, although they do not know which human species made the tools, they say that whoever created them perfectly applied certain *"secondary retouches"* and was also very *"focused on the final regularization of the artifacts."*

https://www.quora.com/

Source: "*A surge in obsidian exploitation more than 1.2 million years ago at Simbiro III (Melka Kunture, Upper Awash, Ethiopia)",* Margherita Mussi et al, **Nature Ecology & Evolution**, 2023

30-Million-Year-Old Hyper-carnivore Skull 'Dream Find' For Paleontologists

An artist's impression of what Bastetodon may have looked like

In Fayum, Egypt, where now lies a barren desert, a lush forest once stood, teeming with life. Paradise for all creatures therein, however, it was not. The primates, hippopotamuses, elephants, and hyraxes that lived there 30 million years ago were all likely prey for one fearsome hunter: a leopard-sized apex predator with crushing jaws and razor-sharp teeth. We know this because paleontologists have just made a startling find: a nearly complete skull from this newly discovered hypercarnivore. It belonged to a member of the extinct order of carnivores known as ***Hyaenodonta***. A team of paleontologists has given the fearsome creature the name ***Bastetodon syrtos,*** after the Egyptian lioness-headed goddess of protection, Bastet. Excavating layers of rock for days had yielded some fossilized skull bones. But just as they were about to conclude their work, a team member spotted something remarkable, a set of large teeth sticking out of the ground, that led to a nearly complete skull of an ancient apex carnivore, a dream for any vertebrate paleontologist. The Fayum Depression, where the bones were found, represents an incredibly rich and important fossil assemblage for understanding a 15 million-year period in the Paleogene, a crucial time in the rise of mammals. Paleontologists have been working in the region for more than a century, uncovering the rich ecosystem that once thrived there. The animal was a hypercarnivore, one whose diet, much like cats and crocodiles, consists of more than 70 percent meat. It would have occupied a top predator position in its local food web. These remains belonged to a group of lion-sized hyaenodonts that lived in the Fayum region millions of years ago. *Bastetodon* originated in Africa, and from there, the animals spread across the Northern hemisphere, making their way to Asia, Europe, India, and North America. However, their reign in Africa was curtailed by environmental changes that led to their eventual extinction, opening ecological niches for other predators to rise to prominence. The discovery of *Bastetodon* is a significant achievement in understanding the diversity and evolution of hyaenodonts and their global distribution. Researchers are eager to continue their investigations to unravel the intricate relationships between these ancient predators and their environments over time and across continents.

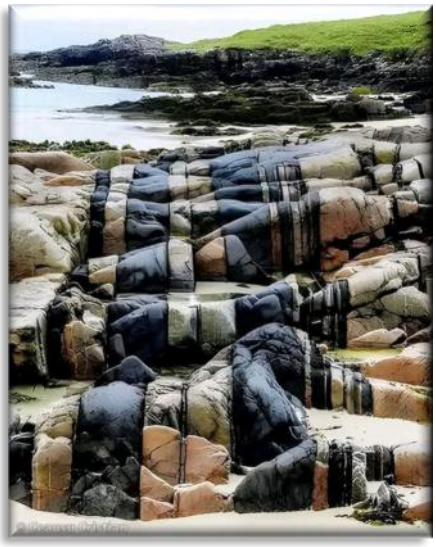
https://www.sciencealert.com/30-million-year-old-hypercarnivore-skull-dream-find-for-paleontologists

Spotlight Gemstone: Aquamarine

Aquamarine, the blue variety of the mineral Beryl and birthstone of March, is a rich, medium- to dark-blue-colored stone produced in Brazil, Madagascar, Russia, and the USA , and it has long been a symbol of youth, health and hope. Recently, aquamarine from China and Columbia has come on the market, but it is generally a little bit more yellow. Aquamarine is a highly sought-after semi precious gem, which for centuries has been used in the creation and encrustation of jewelry and everyday items. Sailors of legend believed that mermaids' tails were made of Aquamarine. The lucky stone was thought to protect the sailors from drowning and ensure their safe return. The gem was believed to aid in digestion, and Roman physicians would employ Aquamarine to treat overeating and reduction of body fluid retention. Aquamarine was thought to possess the ability to reawaken the love in married couples. Roman legend also tells that it absorbs the atmosphere of young love; "*When blessed and worn, it joins in love, and does great things.*" It is also considered an appropriate gift for a Groom to give to his bride following the consummation of their marriage. To the Sumerians, Egyptians, and Hebrews, Aquamarine was the symbol of happiness and everlasting youth. Legend says that you should place your Aquamarine under a full moon, to help restore its look and renew its energy. Aquamarine colors range from very light blue all the way through to a deeply saturated Ocean blue. The best color is often called Santa Maria Blue and recently there has been a new find in Madagascar called Double Blue. The name Aquamarine comes from the Latin words "aqua" (Water) and "marina" (Sea). The largest stone ever found is from Minas Gerais., Brazil; it weighed 242 pounds and measured 19 inches x 17 inches. The largest cut Aquamarine is the ***Dom Pedro*** which now sits in the Smithsonian Institute. It finished weighing in at 10,363 cts and measured 14 x 4 inches.

https://www.gemrockauctions.com/learn/a-z-of-gemstones/aquamarine-information-the-blue-bery

What in the World?



What in the World is this spectacular rock formation and where is it?

February's Photo

January's **What in the World** photo is a fossil of a carnivorous mammal attacking a larger plant-eating dinosaur plant-eating dinosaur locked in mortal combat, intimately intertwined, and it's among the first evidence to show actual predatory behavior by a mammal on a dinosaur

ROCK CALENDAR
CVRMS EVENTS OF INTEREST

2025

Mar. 18 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Cornell College Students and Faculty
Program to be announced

Mar. 22-23 — CVRMS Rock Show
Hawkeye Downs, Cedar Rapids
Show Theme: *The Ice Age*
more information on Pages 10 & 11

Apr. 6 — Black Hawk Rock Show
Waterloo Center for the Arts
225 Commercial Street, Waterloo, IS
more information on Page 9

Apr. 15 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Program to be announced

May 20 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Program to be announced

June 17 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Program to be announced

July 15 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Program to be announced

Aug. 19 — CVRMS Monthly Meeting
Hiawatha Community Center 7:15 pm
Program to be announced

Sept. 20-21 — CVRMS Rock Auction
More Information in Future Newsletters

Ask a Geologist

by Ray Anderson aka Rock Doc , CVRMS Vice President

Ask a Geologist is a monthly column that gives CVRMS members an opportunity to learn more about a geologic topic. If you have a question that you would like addressed, please send it to rockdoc.anderson@gmail.com, and every month I will answer one in this column. Please let me know if you would like me to identify you with the question. I will also try to respond to all email requests with answers to your questions.

Since no one provided a question to *"Ask a Geologist"* this month again I have an opportunity to discuss an article of interest to me. I recently read an interesting article about how the Late Precambrian Snowball Earth (a completely iced-over planet) may have contributed to the rapid evolutionary changes of life on Earth, the "***Cambrian Explosion",***

Destructive Forces of Ancient Glaciers May Have Given Complex Life a Boost

By Chris Kirkland

Imagine floating in space, gazing on a frozen white orb. The ball hangs in the void, lonely and gleaming in the light from its star. From pole to equator, the sphere is covered in a thick crust of ice. In orbit around the white planet is a single cratered moon. You are gazing on **Earth in the Cryogenian period, 700 million years ago**. This is about three times as long ago as the earliest dinosaurs roamed – but still not long in the scheme of Earth's mind-bending 4.5 billion years of history. During the Cryogenian, our planet was plunged into a series of deep freezes when enormous glaciers flowed across the globe. In new research published in *Geology*, we show that these crushing rivers of ice, sometimes thousands of feet thick, pulverized the planet's rocky surface like enormous bulldozers. When the ice eventually thawed, the ground-up minerals washed into the oceans where they may have provided the nutrients needed for the evolution of complex life. According to the **Snowball Earth hypothesis**, Earth underwent at least two extreme global glaciations during the Cryogenian. Traces of these events can be seen across the globe in sedimentary rocks formed under glacial conditions, strongly suggesting that ice spread from the poles to reach the equatorial region. Nobody is sure exactly what triggered these deep-freeze events, though scientists have proposed a range of possibilities. One key may have been a significant decline in atmospheric greenhouse gases, particularly carbon dioxide (CO_2). During **'Snowball Earth**' phases, our planet was encrusted with a thick layer of ice. The CO_2 levels in the atmosphere may have fallen because of increased weathering of rocks situated on a large tropical continent that existed at the time. When continents are positioned in tropical regions, warm, moist conditions accelerate chemical weathering, pulling CO_2 out of the atmosphere, locking it away in carbonate minerals. Tectonic activity during the breakup of continents that happened during this period may have also played a part. It could have created conditions such as shallow seas, leading to more removal of CO_2 from the air. As ice sheets advanced toward the tropics, they reflected more sunlight back into space, leading to further cooling. These processes together caused ice to spread rapidly until the planet was almost entirely frozen. Volcanic activity may have played a crucial role in ending these ice ages. As glaciers covered the planet, interactions between Earth's crust, oceans and atmosphere slowed dramatically. As a result, when volcanic eruptions injected CO_2 into the atmosphere, it would not have been re-absorbed but rather accumulated over millions of years. These high levels of CO_2 created a runaway greenhouse effect, warming the planet and eventually melting the ice. The resulting thaw caused rapid sea level rise and an influx of nutrients into the oceans. Distinct rock formations were created during this abrupt climate change, as the chemistry of the oceans responded to the new conditions. The surge of nutrients may have contributed to a cascade of biological changes, possibly setting the stage for the rise of complex life. Many scientists have considered the idea that changing atmospheric conditions during the thawing of Snowball Earth led to changes in ocean chemistry. In our new research, we found that material scraped off the continents during the thaw may also have played a role. We studied sections of rock, from older to younger, through the snowball period to melt down. By doing this, we built up a picture of what the glaciers and the subsequent river systems were doing to the crust of our planet. We explored minerals with these sequences of rock and found consistent distinctive changes during periods of time when snowball events started and also when thawing occurred. Snowball Earth events were associated with a pronounced increase in older, deeper crust being exposed and ground down under thousands of feet of ice. As the glaciers retreated during thaw periods, massive outflows of melt water transported mineral grains that had been trapped and stabilized under the ice. Once exposed to liquid water, fragile minerals dissolved, releasing chemicals. This process, like the changes in the atmosphere. would have changed the chemistry of the oceans. The glacial retreat help shape the distribution of elements critical to ocean ecosystems. The timescales of Earth's natural processes are important to keep in mind. Over thousands, millions and billions of years, processes such as plate tectonics, erosion, and atmospheric cycles will continue to shape the planet's future On shorter timescales, however, human activities have become the dominant force driving climate change. While Earth itself will endure, the survival of complex human societies depends on our actions today. We are passengers on an extraordinary ***"spaceship Earth,"*** a planet that recycles its chemical building blocks through dynamic geochemical cycles, using matter originally forged in ancient stars. These processes regulate Earth's surface and sustain life, even as our planet's fate is tied to the evolution of the Sun and the cosmos. Humanity, unique among Earth's species, has developed the tools and systems to mitigate existential threats such as climate change, famine, war and even asteroid impacts, yet the effective use of these capabilities remains in our hands. The deep past provides a guide on how chemical cycles on our planet operate. Whether we will be wise enough to use this information is yet to be seen.

https://www.sciencealert.com/destructive-forces-of-ancient-glaciers-may-have-given-complex-life-a-boost

The Twenty-Mule-Team Borax Wagons

The purpose of the twenty-mule-team wagons was to transport 10 short tons of borax ore per journey. The rear wheels, standing at a height of seven feet, were equipped with 1-inch-thick iron tires. The wagon beds, crafted from solid oak, measured 16 feet in length and 6 feet in depth, with an empty weight of 7,800 pounds. The convoy, extending over 180 feet with mules in tow, consisted of three wagons: the first as a trailer, the second known as "*the tender*" or the "*back act*ion," and the last serving as a water tank. When loaded with ore, the complete weight of the mule train, including the wagons, amounted to approximately 73,200 pounds. The water tank, holding 1,200 gallons, supplied the mules with water during the journey. An additional 500--gallon wagon was occasionally appended to deliver water to a dry camp along the route. Over a span of six years, the teams successfully transported more than 20 million pounds of borax out of Death Valley. The horses, positioned as wheelers closest to the wagon, were ridden by one of the two individuals typically required to operate the wagons. While larger than the mules, the horses were considered less intelligent and less adaptable to desert conditions. Remi Nadeau's historical account, *"Nadeau's Freighting Teams in the Mojave,"* highlights the mules' superiority for general use in the desert region. The **teamster** controlled the team using a single long rein, known as a "*jerk line,"* aided by a lengthy blacksnake whip. Typically riding the left wheeler, the teamster could also operate from the trailer seat, managing the brake on steep descents. The **swamper**, usually riding the trailer, would be positioned on the back action in hilly terrain to operate the brake. Armed with a can of small rocks, the swamper could encourage an inattentive mule to return to work. Both men were responsible for preparing the team, tending to the mules' needs, and addressing any veterinary or repair requirements. A mid-day stop allowed for feeding and watering the mules in harness, while night stops provided corrals and feed boxes. Each day's travel averaged around 17 miles, and the entire one-way trip took approximately ten days. The company constructed cabins at night stops for the use of drivers and swampers.

A 20-mule team before its 165-mile journey to the railhead in Mojave, California. C. 1883-1889.

https://www.quora.com/

An Archaeological Discovery in Canada Rewrites the History of North America and Questions the Bering Strait Theory

A major archaeological discovery near the community of Sturgeon Lake First Nation, in the province of Saskatchewan, Canada, is revolutionizing the understanding of the **earliest Indigenous civilizations on the continent**. A prehistoric settlement dating back **11,000 years** has been found, making it one of the oldest known Indigenous sites to date. This finding not only confirms the existence of organized societies in the region much earlier than previously thought but also places it among the world's most significant archaeological sites, such as the Pyramids of Egypt, Stonehenge in England, and Göbekli Tepe in Turkey. The discovery challenges previous narratives about the presence and development of Indigenous cultures in North America. The site, located approximately five kilometers north of the city of Prince Albert, on the banks of the North Saskatchewan River, was initially identified by researcher and amateur archaeologist Dave Rondeau. During an inspection of the area, Rondeau observed signs of erosion on the riverbank, which exposed important artifacts. The initial analysis conducted by a team of archaeologists from the University of Saskatchewan and the University of Calgary suggests that the site was not merely a temporary hunting camp but a permanently established community. Among the most significant findings are **stone tools, remnants of fire pits, and lithic materials** used in tool-making. The layers of charcoal found indicate that the region's inhabitants were already **practicing fire management**, aligning with oral traditions passed down through generations. Additionally, the discovery of large bison remains provides valuable insight into hunting techniques and the evolution of this species over time. *"This finding challenges the outdated notion that early Indigenous peoples were purely nomadic,"* explained Dr. Glenn Stuart of the University of Saskatchewan. *"The evidence suggests a deep relationship with the land and careful environmental stewardship. Moreover, it casts doubt on the Bering Strait theory, supporting oral narratives that Indigenous peoples have inhabited these lands since time immemorial."* The Âsowanânihk Council, whose name means *"A place to cross"* in Cree, has taken the lead in protecting and studying the site. Comprised of elders, knowledge keepers, educators, youth, and scholars, the council is committed to preserving this historic discovery. However, the site faces significant threats due to logging and nearby industrial activities. In response, the Sturgeon Lake First Nation community has called on local, provincial, and national governments to implement immediate protective measures. *"This discovery is a powerful reminder that our ancestors were here, building, thriving, and shaping the land **long before history books acknowledged it**,"* stated Chief Christine Longjohn. *"For too long, our voices have been silenced, but this site speaks for us, proving that our roots run deep and remain alive."*

https://www.quora.com/

Amber

2000 years ago, amber was known as a fairly valuable mineral. This is because amber is the first jewelry material and there is a myth that says that amber was created by the gods, produced by sunlight, and is also considered to bring good luck to anyone who wears amber around their neck. However, as the world of fashion developed, there was a rebuttal from scientists, people never wore amber again, people preferred other materials to make jewelry. However, amber can still be a very valuable item. How could that be? Take a look at these:

Amber is obtained from tree sap or resin. Amber has the ability to preserve body parts trapped in it. The lizard in the picture above is 54 million years old.

Spiders from prehistoric times

A 50 million year old snake

dinosaur lice

A 5 million year old praying mantis

https://www.quora.com/

Monstrous Creatures of The Past Could Have Feasted on Today's Apex Predators

Biodiversity was booming in the early Cretaceous Period, and not just among dinosaurs. The oceans also teemed with life, including some monstrous predators unlike anything alive today. In a new study, researchers dive deep into one intriguing ecosystem from the early Cretaceous, where bus-length marine reptiles like **pliosaurs** preyed on other large carnivores, forming a rare seventh trophic level in their food web. Modern oceans, for comparison, max out at trophic level five or six, represented by apex predators like orcas, sperm whales, and great white sharks. A trophic level indicates a position within a food web, with lower levels signifying species closer to the bottom. Level one features primary producers like algae and plants, while level two includes primary consumers like herbivores. Level three is for carnivores that eat herbivores, known as secondary consumers, and higher levels are for carnivores that prey on fellow carnivores. The new study focuses on ancient inhabitants of the **Paja Formation**, an **early Cretaceous** geologic formation located in present-day Colombia. Sea levels were higher at the time, and much of the area was covered by a warm, shallow sea. That sea apparently bustled with life at all trophic levels, the study's authors note, part of a broader biodiversity surge during the Cretaceous driven largely by warm climates and the ongoing breakup of the supercontinent Pangaea. It takes a diverse, healthy ecosystem to support high-level apex predators, and the vibrancy of this prehistoric sea allowed some incredible leviathans to evolve. The *Paja ecosystem* was home to massive dolphin-like reptiles known as **ichthyosaurs**, crocodile-shaped beasts called **teleosaurs**, and long-necked **pliosaurs**, some more than 30 feet long. The potential for a seventh trophic level illustrates how rich and intricate the Paja ecosystem must have been **130 million years ago**. To shed light on this ancient habitat, the researchers rebuilt its ecosystem network, a model of interactions among species within an ecosystem, using data from all known animal fossils found at the Paja Formation. They factored in key details like the fossilized animals' body sizes and feeding adaptations, and used analogs from modern wildlife to help them infer some unfossilized information. When it was finished, their network provided an unprecedented look back at one of the liveliest marine food webs known to science. The Paja Formation has become known for its imposing marine reptiles, but it's unlikely those apex predators could have evolved without a robust food web to support them. Relatively little is known about the habitat's broad paleoecological structure, including the many fish, ammonites, and other important creatures from lower trophic levels. In addition to spotlighting this one incredible Cretaceous community, the study's authors say their work should help answer broader questions about the evolution of marine ecosystems, including the origins and influence of "*exceptionally large predators*" like those at Paja. Not many fossil ecosystems have received the kind of scrutiny this study applied to the Paja Formation, but given the wealth of data already available in the fossil record, that may soon change. https://www.sciencealert.com/monstrous-creatures-of-the-past-could-have-feasted-on-todays-apex-predators

An illustration showing some apex predators from the Paja Formation, with a human silhouette for scale.

These are the Smallest Fossilized Dinosaur Eggs Ever Found

In 2021, researchers uncovered the fossilized remains of six remarkably well preserved dinosaur eggs near a construction site in the Chinese region of Ganzhou. Now, after careful laboratory analysis, a team of paleontologists, evolutionary experts, and geoscientists have confirmed the specimens aren't just some of the most complete dinosaur eggs ever found, they're officially the smallest known to scientists. Detailed in a paper published last month in the journal ***Historical Biology***, the new information is "*significant for our understanding of the evolution of theropods in the Late Cretaceous.*" The smallest of the six eggs measures only about 1.14 inches, making it barely half the previous record holder's length, which is known as the Jingguo Micro Ellipsoid Egg. But examining the historic find went far beyond simply breaking out a ruler; to learn as much as possible about the fossils, the team needed the help of specialized lab equipment. According to *Global Times*, researchers led by Fasheng Lou, the chief engineer at the Jiangxi Geological Survey and Exploration Institute and study co-author, utilized both electron microscopy and electron backscatter diffraction tools to examine some of the egg's smallest details. According to their analysis, the **80-million-year-old fossils'** sizes, shell thickness, pore system, and other attributes were unlike any other known non-avian theropod, leading the team to establish a new genus and species, as well as ootaxon (egg taxonomic classification), *Minioolithus ganzhouensis*. Importantly, the largely hands-off examinations mean the fossil unit remains in the same condition as when it was first found. The researchers say these first few years of analysis have already helped better their understanding of how dinosaurs may have built their nests, and will likely aid in learning more about theropod dinosaur reproductive and evolutionary developments.
https://www.popsci.com/science/smallest-dinosaur-eggs/

The new type of dinosaur egg fossils was discovered in the city of Ganzhou, east China's Jiangxi Province.

2025

Black Hawk Gem & Mineral Society

GEM, MINERAL & FOSSIL SHOW

APRIL 6th

10 am to 5 pm

Featuring
Dr. Ray Anderson
Not of This World:
9 Meteorites in Iowa's History

Activities

Silent Auctions
Minerals, crystals, agates, fossils, geodes & more

Plaster Fossil Painting
Color one to keep and take home!

Kids' Pebble Pit
Find fossils, agates & crystals to add to your collection!

Mystery Rock Identification
Have a rock, mineral, or fossil you are unsure about? Bring it for the experts to identify.

Demonstrations

Flintknapping
Geode Cracking
Gold Panning
UV Fluorescent Rocks
Silversmithing
Rock Polishing/Lapidary

Speakers & Presentations

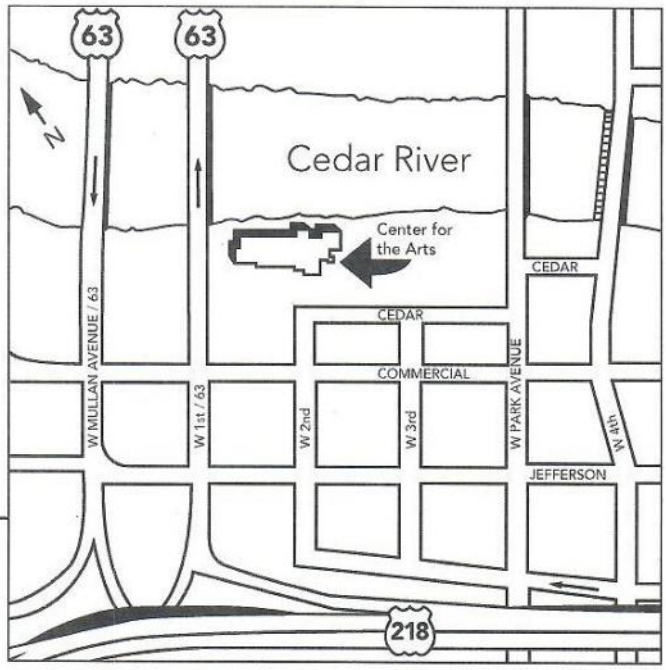
Dr. Ray Anderson
Not of this World! 9 Meteorites in Iowa's History

Dr. Joshua Sebree
Astrobiology of the Underground. Exploration & Research of Caves in Iowa and South Dakota

James Preslicka, Geologist & Amateur Paleontologist
Rockford Iowa vs Amana Iowa Fossil Beds, Nearshore vs Offshore in the Lime Creek Formation

Dealers & Special Displays

Rocks Minerals Crystals Jewelry
Fossils Agates Geodes Apparel



Waterloo Center for the Arts

225 Commercial Street • Waterloo, IA

Check out our Facebook Group!

For additional information
Email the club: info@bhgmsrockclub.org
Show Chairman: Dave Malm | 319-266-6433
Becky Stansbery | 319-961-5792.

Free Admission • Donations Accepted
Sign up to become a member!

Cedar Valley Rocks & Minerals Society

Presents its

2025 GEM, MINERAL & FOSSIL SHOW

60th Annual Show

Iowa's Largest Show Among Midwest's Largest

Saturday, Mar 22 - 8:30 a.m. to 6:00 p.m.
Sunday, Mar 23 - 9:30 a.m. to 4:00 p.m.

Hawkeye Downs Expo Center
4400 6th Street SW
Cedar Rapids, Iowa

ICE AGE
FEATURING IOWA MASTODON BONES

PROGRAMS
Programs on Theme-Related Topics
Call ahead or check our website for Speakers & Times

DEMONSTRATIONS
Flat Lap Polishing
Flint Knapping
Gold Panning
Wire Wrapping

ACTIVITIES
Pebble Pit for Kids:
1¢, 5¢, 10¢, 25¢, & 50¢ Items
$1 Rock & Mineral Kits
Dinosaur Bones Interaction
Geode Cracking
Gold Panning
Making Casts
Sluicing for Minerals

HOT FOOD

DISPLAYS
Agates, Geodes
Minerals, Crystals
Amethyst, Fossils

SILENT AUCTION
Geodes, Minerals,
Crystals, Agates
Fossils, Shells

EDUCATIONAL POSTERS
Posters on Various Aspects of the Theme

ROCK IDENTIFICATION
Iowa Geological Survey

DONATIONS REQUESTED

Adults over 18	$3.00
Students(12-18)	$1.00
Children (Under 12)	Free
Youth Groups (w/adult)	Free

MANY ITEMS FOR SALE, INCLUDING:

Books	Fossils	Jewelry	Minerals	Book Ends
Opal	Agates	Carvings	Seashells	Petrified Wood
Slabs	Geodes	Crystals	Tumblers	Lapidary Equip.
Gems	Beads	Spheres	Meteorites	Jewelry Findings

PROFITS GO TO SCHOLARSHIPS
NOT RESPONSIBLE FOR ACCIDENTS

CHILDREN MUST BE ACCOMPANIED BY AN ADULT
ONLY SERVICE DOGS ALLOWED

For Additional Information, Contact:
Marvin Houg (319-350-9435; m_houg@yahoo.com);
Sharon Sonnleitner (319-310-0085, sonnb@aol.com); Ray Anderson (rockdoc.anderson@gmail.com)
For program, dealer, and show updates, check: https://www.cedarvalleyrockclub.org

Rock Show Information

Rock Show Schedule

Friday March 21 Show Set-Up

9:00 am begin setting up tables
~12:00 noon Lunch provided by Dell (chili and hot dogs)
1:00 pm continue set-up and help dealers
6:00 pm **POT LUCK DINNER, furnished by Club Members**
PLEASE BRING YOUR BEST DISH TO SHARE
7:00 pm complete set up

Saturday March 22 First Day of Show

8:30 am doors open
6:00 pm show ends for the day
6:15 pm Hy Vee catered dinner: dealers and members

Sunday March 23 Second Day of Show

9:30 am doors open
4:00 pm show ends
4:00 pm show tear down
WE WILL NEED LOTS OF HELP TO TEAR DOWN
AS SOON AS THE SHOW IS OVER

More Information for Members

Friday March 21

6:00 pm **Pot Luck Dinner**
PLEASE BRING YOUR BEST DISH TO SHARE
— and bring a little extra since we will be inviting the dealers to join us as our guests

Saturday March 22 First Day of Show

6:30 pm **Hy Vee catered dinner: dealers and members**

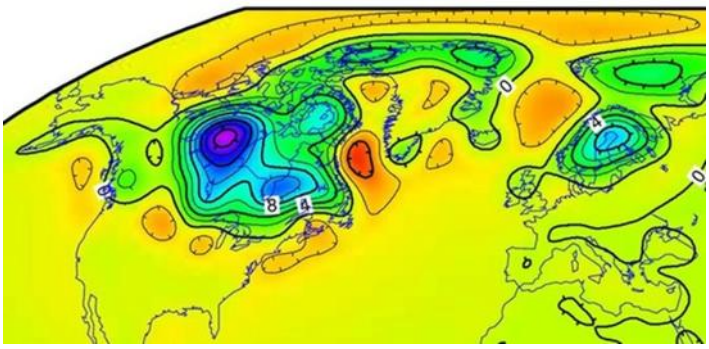
The Dinner will cost **$22**. **You must call** or **e-mail** Marv Houg for reservations **by March 13**. Pay at the dinner.
Marv Houg (319) 350-9435 m_houg@yahoo.com

Also, we are **asking club members to bring desserts** for the Saturday dinner in order to keep prices down. If you can't help with set-up or during the show, bringing a dessert for Saturday is a great way to contribute.

New York City is Sinking Due to the Concrete Skyscraper's Weight

New York is sinking. It should sink 10 to 16 inches over the next century. It is ***not because of skyscrapers*** at all. That amount of **sinking is from *post-glacial rebound*.** About 24,000 years ago, a huge ice sheet spread across most of New England, and a wall of ice more than a mile high covered what is today Albany in upstate New York. Earth's mantle is a little like a flexed mattress. It has been slowly readjusting ever since the ice melted. In places where the ice was thick, like Hudson Bay, the land is rising. New York City, which sits on land that was raised just outside the edge of the ice sheet, is now sinking back down. Many areas in NYC should also sink about 5 feet by 2100 because the fill that these areas are built on is compacting**.** In some places, the weight of buildings on top of landfill is increasing the sinking. If New York City sinks 3feet by 2100, as models predict, it would put nearly half the city underwater during high tide. Storm surges would reach even farther inland. Steps, sewer pipes, water mains, and building foundations will all be affected as well. There are some *hot spots*. Runway 13/31 at LaGuardia Airport, is subsiding at a rate of about 0.15 inches per year. It is on top of a land fill. Arthur Ashe Stadium is sinking at a rate of about 0.18 inches per year. Other subsidence hot spots include the southern portion of Governors Island, built on 38 million square feet of rocks and dirt from early 20th century subway excavations, as well as sites near the ocean in Brooklyn's Coney Island and Arverne by the Sea in Queens that were built on artificial fill. On top of that, **sea levels are rising, between 1.41 and 2.76 feet by 2100**. Higher sea level also means more frequent high-tide flooding.

Vertical crustal motions in mm per year



"Vertical crustal motions in mm/yr (cm/decade) from a 2007 model. Blue and purple areas up to +18 mm indicate rising due to the removal of the weight of ice sheets. Yellow and red areas down to -6 mm indicate subsidence as mantle material moves away from these areas to supply rising areas and deflates forebulges peripheral to the maximum extent of the ice sheets."

https://www.quora.com/

Ray Anderson, Editor
2155 Prairie du Chien Rd. NE
Iowa City, Iowa 52240-9620

Next Meeting:
TUESDAY MAR. 18
Hiawatha Community Center
"3 weeks on the South Island of New Zealand"
by Dr Rhawn Dennison and students
Cornell College Department of Earth and Environment

CEDAR VALLEY GEMS MARCH 2025 VOL. 51, ISSUE 03

2024 & 2025 Officers, Directors, and Committee Chairs

President	Marv Houg (m_houg@yahoo.com)	(319)350-9435
Vice President	Ray Anderson (rockdoc.anderson@gmail.com)	530-2419
Treasurer	Dale Stout (dhstout55@aol.com)	365-7798
Secretary	Dell James (cycladelics@msn.com)	270-6854
Editor	Ray Anderson (rockdoc.anderson@gmail.com)	530-2419
Liaison	Kim Kleckner (ibjeepn2@gmail.com)	560-5185
Imm. Past Pres.	Sharon Sonnleitner (sonnb@aol.com)	310-0085
Director '25	Matt Burns (mlburnsmars@gmail.com)	329-4046
Director '26	Jay Vavra (vavrajj@gmail.com)	538-3689
Director '27	Laura Halladay (halladaylaura@icloud.com)	431-0381
Sunshine	Dolores Slade (doloresdslade@aol.com)	351-5559
Hospitality	Karen Desmarais (desmarais_3@msn.com)	365-0612
Webmaster	Sharon Sonnleitner (sonnb@aol.com)	310-0085

Club meetings are held the 3rd Tuesday of each month from September through November and from January through May at 7:15 p.m. Meetings are held at the Hiawatha Community Center in the Hiawatha City Hall, 101 Emmons St., Hiawatha IA. The December meeting is a potluck dinner held on the 2nd Tuesday at 6:30. June, July, and August meetings are potlucks held at 6:30 p.m. at area parks on the 3rdTuesday of each month.

CEDAR VALLEY ROCKS & MINERAL SOCIETY

CVRMS was organized for the purpose of studying the sciences of mineralogy, geology, and paleontology and the arts of lapidary and gemology. We are members of the Midwest (MWF) and American (AFMS) Federations. Membership is open to anyone who professes an interest in rocks and minerals.

Annual dues are $15.00 per family per calendar year. Dues can be sent to:

Dale Stout
2237 Meadowbrook Dr. SE
Cedar Rapids, IA 52403

CVRMS website:
cedarvalleyrockclub.org