# Cedar Valley Gems

Cedar Valley Rocks & Minerals Society

Cedar Rapids, Iowa

cedarvalleyrockclub.org

CEDAR VALLEY GEMS JULY 2022 VOL. 49, ISSUE 07



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


## Next CVRMS Meeting
## Tues. July 19
## 6:00 pm—eat at 6:30
## Pot-Luck Picnic!

## at Wanatee Park
(formerly Squaw Creek Park)

**Meadowlark Shelter**

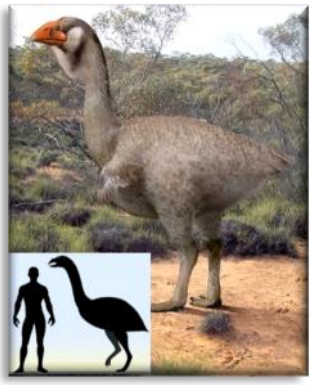
## Geode Cracking
## Rock Identification
## Rock Show & Tell

Bring Your Favorite Dish to Share

Bring Your Own Table Service

## 'Demon Ducks of Doom' Laid Melon-Size Eggs in Prehistoric Australia

In 1981, researchers in Australia discovered the charred remnants of numerous eggs from several cooking fires used by prehistoric humans, dating to about 50,000 years ago. Some of the eggs were identified as those of emus. But a few oversized specimens belonged to a second, unknown bird. For years, scientists argued about the identity of that large bird. But given the eggs' size and age, over time, two contenders emerged: *Progura*, a group of large turkey-like birds, or *Genyornis*, sometimes referred to as **"demon ducks of doom"** because of their huge size and evolutionary relation to the smaller waterfowl.



Now, a new analysis using sophisticated protein sequencing technology and artificial intelligence has put the debate to rest. Given the age and the burial temperature of the eggshell fragments (which had been cooked over an open flame), most of the DNA in the egg samples was too degraded to be useful. The proteins, however, were still in relatively good shape After sequencing these molecules and determining which genes would have produced them, the researchers used a special algorithm to compare their findings to the genomes of more than 350 living species of birds. The results revealed that the eggs were not laid by a group of large-footed chicken-like birds called megapodes, and therefore did not belong to the *Progura* genus, but were, in fact, *Genyornis newtoni,* a truly intimidating creature. It stood over 6.5 feet tall and tipped the scales at up to 530 pounds of beak, bones and feather-clad muscle. Fittingly, these mega ducks also laid large eggs; each weighed around 3.5 pounds about the size of a melon. *Genyornis*'s huge eggs would have been an ideal source of protein for Indigenous Australian people, provided they could safely collect them from the big birds' nests. In fact, the scientists now suspect that humans' appetite for the melon-size eggs may have helped drive *Genyornis* to extinction. https://www.livescience.com/demon-duck-of-doom-eggs

# CVRMS Monthly Meeting, June 21 — Minutes —

**PICNIC AT ELLIS PARK**

Very quick meeting was held for the purpose of approving the scholarships designated by the amount approved by the Board. Motion made to approve by AJ, 2nd by Ray. A total of **$11,250.00** to be divided between the **University of Iowa Department of Earth and Environmental Studies ($5,375)**, **Cornell College Department of Geology ($3,687),** and the **Van Allen Science Teaching program-($2,187)**. Passed with no objections.

Respectfully submitted,

*Dell James,* Secretary

# Why Does Quartz Feel Cold?

Heat is energy. Energy moves from hot objects to cooler objects, until both objects are the same temperature. The ability of an object to absorb heat is called its ***"thermal conductivity."*** Sounds scientific, doesn't it? What it means is that solid objects have the ability to take heat (*energy*) from the world around them and move that heat into the object itself. Hold an ice cube in your hand. Feel how very cold it is? It feels cold because the block of ice is taking heat away from your hand.

This is what happens with quartz. Quartz has a very high thermal conductivity. This means that it can move heat very easily and quickly away from your hand. When it does this, your brain tells you that the quartz feels cool and that your hand is feeling cool as well.

*from Mini Miner's Monthly, v.12, no. 5, May 2022*

# CVRMS Board Minutes May 24

**MEETING CALLED TO ORDER:** 7:15 by Marv at his house. Board Members present. Marv Houg, President, Ray Anderson, Matt Burns, Jay Vavra, Bill Desmarais, Kim Kleckner, Dell James, and Sharon Sonnleitner on Zoom.

**MINUTES OF PREVIOUS MEETING** reviewed. Motion to accept as published by Jay, 2nd. By Bill. Minutes approved.

**TREASURER'S REPORT:** Since Dale was not present, a motion to table the Treasurer's Report until next meeting by Bill, 2nd by Matt. Scholarship checks have been written and will soon be disbursed. Official treasurer's report tabled.

**2023 SHOW:** Still need consent from membership for approval of ***"Wonderful World of Agates"*** to be the theme. Will be voted on at July picnic. Ray will line up speakers for show. **Hawkeye Downs** has not produced contract yet. Sharon will stay on that.

**AUCTION 2022—OCTOBER 8-9:** There have not been significant changes in consignors. Kim has been busy with identifying materials for door prizes, silent auction and pebble pit for the Show.

**FIELD TRIPS:** Matt has been busy with lining up potential field trips for members. They have been collecting some interesting specimens from the various field trip localities.

**CVRMS OUTREACH:** Kim, Bill, and Ray have been busy with outreach programs for kids. Bill and Ray presented a program to the Hiawatha Library Summer Reading Program on June 8 for about 25 participants. Bill shared a thank-you note from Hiawatha Library. Kudos to each of them. Bill did a program on Dinosaurs at the Ely Library Summer Reading Program on June 22 for about 70 participants. Bill has another presentation scheduled for the Springville Library Summer Reading Program on June 29 .

**OTHER TOPICS:** We are still looking for someone who will conduct a wire wrap class. Kim will post on Facebook that we are looking for someone. We are also seeking someone to present a Flint Knapping class. Kim is also working on that.

**ADJOURNMENT:** Motion to adjourn by Jay, 2nd by Bill. Meeting adjourned 8:50 pm .

Respectfully submitted,

*Dell James,* Secretary

# Tree Records Partial Reversal of Earth's Magnetic Fields

In Ngawha, on the North Island of New Zealand, an ancient tree has been discovered that contains a record of a reversal of the Earth's magnetic field. The tree - an *Agathis australis*, also known as the **Maori name kauri** - was found during excavation work for the expansion of a geothermal power plant. The tree was buried 30 feet deep and measures 8 ft in diameter and 100 ft in length. Carbon dating indicated that she lived for 1,500 years, between 41,000 and 42,500 years ago. The lifespan of the kauri tree covers a point in Earth's history when the magnetic field nearly reversed. Magnetic north and south shifted positions for a short period of time, called a geomagnetic excursion. The Earth's magnetic field is believed to be generated by the iron in the planet's core. It produces electrical currents that extend into space as they move. The magnetic field is really like a barrier that protects the planet from the solar wind, which is a stream of particles from the Sun that could remove the Earth's atmosphere, as happened on Mars. With the magnetic field, they are attracted to the poles. When the magnetic field reverses, it weakens and the planet suffers more from the effect of the Sun's radiation. It is not a sudden movement, but a slow process, during which the strength of the field becomes weak, most likely the field becomes more complex and may show more than two poles for a while, and then it strengthens and aligns itself in the opposite direction. This process takes about 7,000 years to complete, and in the last 83 million years, there have been 183 magnetic pole reversals. The last total reversal took place about 780,000 years ago. Scientists have already linked extinction events to reversals of magnetic fields. The rings of this kauri tree have a complete record of this near reversal, and this is the first time a tree that lived through the entire event has been found. The huge tree grew during a period known as the Laschamp Excursion, named for geomagnetic anomalies found in the Laschamps lava flows in Clermont-Ferrand, France . According to NASA, magnetic field reversals occur at random intervals, although over the last 20 million years it appears to have settled into a pattern, occurring once every 200,000 to 300,000 years, with the last total reversal taking place about 780,000 years ago. Recently, scientists announced that the magnetic north pole had moved unexpectedly. Instead of constantly tracking from the Canadian Arctic towards Siberia, it sped up so much that researchers had to update the World Magnetic Model (WMM), which is a representation of Earth's magnetic field. It is used extensively in navigation by the US Department of Defense, the UK Ministry of Defense, and many civilian systems - so knowing exactly where the north and south magnetic poles are is of utmost importance. https://www.science.org/doi/10.1126/science.371.6531.766

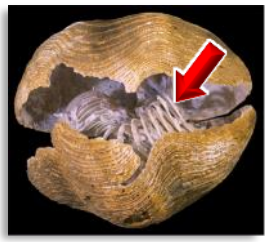
# Spotlight Gemstone: Ruby


Ruby ($Al_2O_3$:Cr ) is the most valuable variety of the corundum mineral species, which also includes sapphires. Rubies can command the highest per-carat price of any colored stone. This makes ruby one of the most important gems in the colored stone market. In its purest form, the mineral corundum is colorless. Trace elements that become part of the mineral's crystal structure cause variations in its color. Chromium is the trace element that causes ruby's red, which ranges from an orangey red to a purplish red. The strength of ruby's red depends on how much chromium is present—the more chromium, the stronger the red color. Chromium can also cause fluorescence, which adds to the intensity of the red color. The most renowned rubies, like those from Myanmar, the Himalayas, and northern Vietnam, typically form in marble. They're found in layers that are distributed irregularly within the surrounding marble. Marble forms as part of the metamorphic (rock-altering) process, when heat and pressure from mountain formation act on existing limestone deposits. Marble has low iron content, so the rubies that originate in marble (called "marble-hosted" by gemologists) lack iron. Because of this, many have an intense red color. In addition, rubies found in marble typically fluoresce red under ultraviolet light—even the ultraviolet light in sunlight. Fluorescence can make a ruby's color even more intense and increase its value. In other locations, rubies can be found in basalt rocks. Rubies from these sources can have higher iron content, which can make the rubies darker and less intense in color. Higher iron content in the chemical makeup of a ruby can also mask the red fluorescence, eliminating that extra glow of red color seen in marble-hosted rubies. Historically, rubies have also been mined in Thailand, in the Pailin and Samlout District of Cambodia, as well as in Afghanistan, Australia, Brazil, Colombia, India, Namibia, Japan, and Scotland; after the Second World War ruby deposits were found in Madagascar, Nepal, Pakistan, Tajikistan, Tanzania, and Vietnam. The Republic of North Macedonia is the only country in mainland Europe to have naturally occurring rubies. They can mainly be found around the city of Prilep. Macedonian rubies have a unique raspberry color. The ruby is also included on the Macedonian coat of arms. A few rubies have been found in the U.S. states of Montana, North Carolina, South Carolina and Wyoming. https://www.quora.com/What-are-some-historical-records-of-the-reversal-of-the-Earths-magnetic-field

# What in the World?

**What in the World** is this unusual series of holes in the rock; extra credit if you know where this photo was taken.

## June's Photo



Last month's **"What in the World"** image showed a silicified Silurian brachiopod collected by Kim Kleckner. The red arrow on the image on the left shows the brachiopod's lophophors, a soft tissue ring covered with cilia that surrounds the animal's mouth. It serves to filter food particles from the sea water. This soft tissue organ is rarely preserved. The lopophors are more visible in the fossil photo on the right.

# ROCK CALENDAR
# CVRMS EVENTS OF INTEREST

## 2022

**July 19 — CVRMS Picnic Pot Luck**
Wanatee Park Meadowlark Shelter 6:30 pm
Geode Cracking

**Aug. 16 — CVRMS Picnic Pot Luck**
Morgan Creek Park Shelter 6:00 pm
BINGO Night

**Sept. 20 — CVRMS Monthly Meeting**
Hiawatha Community Center 7:15 pm
Program to be determined

**Sept. 23-25 — Geode Fest**
First Christian Church Parking Lot
3476 Main Street
Keokuk, IA
http://keokukiowatourism.org/event calendar/geode-fest

**Oct. 2 — Sunday At The Quarry**
BMC Morgan Quarry
About 1 mile west of Dewer, Iowa
10:00 am — 4:00 pm

**Oct. 8-9 — CVRMS Rock Auction**
Amana RV Park and Event Center
Amana, Iowa
Saturday Oct. 8 Auction 9:00 a.m. to about 8:00 pm
Sunday Oct. 9 Auction 9:00 am to about 3:30 pm
(see page 10 for more information)

**Oct. 21-23 — MAPS Fossil Show**
Orr Building, Illinois State Fair Grounds
Springfield, Illinois
http://www.midamericapaleo.org/

**Oct. 22-23 - Rocktoberfest - Gem, Mineral & Lapidary Show**
Sac & Fox Lapidary Club
Jefferson Co. Fairgrounds,
2606 W Burlington St, Fairfield, Iowa

# 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.

Nobody came forward with a question for "***Ask a Geologist***" last month, so I have attached a copy of an interesting article that was published last month discussing how new developments in DNA technology is changing our understanding of the evolutionary tree, the branching diagram, or a tree, that shows the evolutionary relationships among various biological species .

## New DNA Technology Is Shaking Up The Branches of The Evolutionary Tree

If you look different to your close relatives, you may have felt separate from your family. As a child, during particularly stormy fallouts you might have even hoped it was a sign that you were adopted. As our new research shows, appearances can be deceptive when it comes to family. New DNA technology is shaking up the family trees of many plants and animals. The primates, to which humans belong, were once thought to be close relatives of bats because of some similarities in our skeletons and brains. However, DNA data now places us in a group that includes rodents (rats and mice) and rabbits. Astonishingly, bats turn out to be more closely related to cows, horses, and even rhinoceroses than they are to us. Scientists in Darwin's time and through most of the 20th century could only work out the branches of the evolutionary tree of life by looking at the structure and appearance of animals and plants. Life forms were grouped according to similarities thought to have evolved together. About three decades ago, scientists started using DNA data to build "*molecular trees.*" Many of the first trees based on DNA data were at odds with the classical ones. Sloths and anteaters, armadillos, pangolins (scaly anteaters), and aardvarks were once thought to belong together in a group called edentates ("no teeth"), since they share aspects of their anatomy. Molecular trees showed that these traits evolved independently in different branches of the mammal tree. It turns out that aardvarks are more closely related to elephants while pangolins are more closely related to cats and dogs.

**Coming together**

There is another important line of evidence that was familiar to Darwin and his contemporaries. Darwin noted that animals and plants that appeared to share the closest common ancestry were often found close together geographically. The location of species is another strong indicator they are related: species that live near each other are more likely to share a family tree. For the first time, our recent paper cross-referenced location, DNA data, and appearance for a range of animals and plants. We looked at evolutionary trees based on appearance or on molecules for 48 groups of animals and plants, including bats, dogs, monkeys, lizards, and pine trees. Evolutionary trees based on DNA data were two-thirds more likely to match with the location of the species compared with traditional evolution maps. In other words, previous trees showed several species were related based on appearance. Our research showed they were far less likely to live near each other compared to species linked by DNA data. It may appear that evolution endlessly invents new solutions, almost without limits. But it has fewer tricks up its sleeve than you might think. Animals can look amazingly alike because they have evolved to do a similar job or live in a similar way. Birds, bats and the extinct pterosaurs have, or had, bony wings for flying, but their ancestors all had front legs for walking on the ground instead. Our eyes are similar to squid's eyes, with a crystalline lens, iris, retina, and visual pigments. Squid are more closely related to snails, slugs, and clams than us. But many of their mollusk relatives have only the simplest of eyes. Moles evolved as blind, burrowing creatures at least four times, on different continents, on different branches of the mammal tree. The Australian marsupial pouched moles (more closely related to kangaroos), African golden moles (more closely related to aardvarks), African mole rats (rodents), and the Eurasian and North American talpid moles (beloved of gardeners, and more closely related to hedgehogs than these other "*moles*") all evolved down a similar path.

**Evolution's roots**

Until the advent of cheap and efficient gene sequencing technology in the 21st century, appearance was usually all evolutionary biologists had to go on. While Darwin (1859) showed that all life on Earth is related in a single evolutionary tree, he did little to map out its branches. The anatomist Ernst Haeckel (1834-1919) was one of the first people to draw evolutionary trees that tried to show how major groups of life forms are related. Haeckel's drawings (see page 8)made brilliant observations of living things that influenced art and design in the 19th and 20th centuries. His family trees were based almost entirely on how those organisms looked and developed as embryos. Many of his ideas about evolutionary relationships were held until recently. As it becomes easier and cheaper to obtain and analyze large volumes of molecular data, there will be many more surprises in store.

https://www.sciencealert.com/new-dna-technology-is-shaking-up-the-branches-of-the-evolutionary-tree

## Ancient Toothless 'Eel' is Your Earliest Known Ancestor

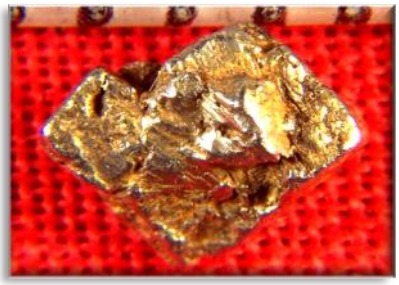
More than a century ago, scientists were stumped by the discovery of an unusual fossil unearthed from a Scottish quarry. The remains suggested a toothless eel-like creature with a potentially cartilaginous skeleton, and for 130 years after the mysterious creature, named *Palaeospondylus gunni,* was unearthed, it continued to defy classification. Now, with the use of high-resolution imaging, a research team has finally determined that this mysterious fish may very well be one of our earliest ancestors. The mysteries surrounding this little fish persisted for so long because of two factors: its diminutive size, with a body measuring just 2.4 inches long, and the unfortunate fact that fossilization dramatically compressed its skeleton, squeezing individual bones into a distorted mass that was a paleontological nightmare to unravel. Prior to the new study, scientists knew that *Palaeospondylus* lived in the middle Devonian epoch, roughly 398 million to 385 million years ago. The fish had well-developed fins but lacked limbs. Curiously, it seemed to lack teeth, unlike most vertebrates of this time. Repeated attempts to place the fish on the evolutionary tree pinned it all over the map. In 2004, researchers confidently reported that *Palaeospondylus* was a primitive **lungfish**. However, a 2016 study suggested it was instead a **hagfish relative**. One year later another team proposed instead that it was a **cartilaginous fish** like modern sharks. This taxonomic tennis match was not a recent phenomenon. This strange animal has baffled scientists since its discovery in 1890 as a puzzle that's been impossible to solve. Truly, it seems that the only thing that paleontologists could agree on was that nobody really knew the identity of this animal. Recently, scientists armed with micro-computed tomography (CT) scanning technology, were able to produce the highest resolution digital images of *Palaeospondylus* to date. To gather the most accurate data, they had to select the best fossils. Since 1890, many *Palaeospondylus* specimens have been found but most were damaged in some way, either by fossilization or excavation, contributing to previous errors in classification. To circumvent this issue, the authors of the new study chose specimens with heads that were completely encased in rock. Scans of these specimens revealed several key features. One was that the inner ear was composed of several semicircular canals, much like the ears of modern fish, birds and mammals. *Palaeospondylus* was likely more closely related to limb-bearing tetrapods than to more ancient species like lungfishes and coelacanths, which would make *Palaeospondylus* a close aquatic predecessor of the first animals that crawled onto land. https://www.livescience.com/ancient-fishlike-weirdo-tetropod-ancestor

*Palaeospondylus* as reconstructed by synchrotron radiation x-ray computed tomography

## Russian Platinum Crystals Naturally Coated with Gold

A Russian mine produces platinum crystals that are naturally coated with gold. The Kondyor Massif is located in the Khabarovsk Region of eastern-most Siberia (at about the same latitude as Juneau, Alaska). The massif (a large block of the earth's crust that is more rigid than the surrounding rock and has been moved or displaced as a unit) has an almost perfect ring shape when viewed from above. It is the world's only circular mountain ridge and remarkably was not formed by a volcanic eruption or a meteorite impact. Inside the 5-mile ring of bare rocks, devoid of vegetation, is the world's biggest deposit of one of the rarest precious metals on Earth, **platinum**, as well as various other precious metals and minerals. Initially, in the 1970s, gold was mined, but prospectors also regularly found platinum in the Kondyor river deposits. It turned out that th source of the platinum wasn't far away. Platinum mining began in 1984, and ever since workers have been finding nuggets weighing from **3 to 8 pounds** in the Kondyor Massif. In total, 100 tons of this highly prized metal have been extracted here since development of the deposit began. Before it is sent to a refinery to be cleaned of impurities, the mined naturally gold covered platinum looks like yellow grains. These nuggets are very rare and it is hard to find them for sale. This little beauty is 1/4" long and the weight is 7.4 Grains (0.48 Gram). Gold-Coated Platinum Nuggets like this one are very rare and make a great investment and are a wonderful addition to any mineral collection. It comes with a location card authenticating the discovery location and certifying the fact that it is a natural platinum crystal nugget. In addition to platinum, there are other metals from the platinum group, as well as a small admixture of iron and titanium. Black garnet, blue calcite, metal konderite (a unique alloy of copper, lead, rhodium, platinum and iridium) are also extracted there. https://www.rbth.com/science-and-tech/331650-platinum-mine-kondyor-russia/amp

An aerial view of the circular Kondyor Massif, its interior being mined.



A gold-coated platinum nugget.

# CVRMS News and Information:

## CVRMS Contributes $11,249 to Area Education Programs

Using a formula defined in CVRMS By-Laws, the profits from our **2022 Rocks, Fossils, and Minerals Show** were divided between three local educational programs. Funding for scholarships were presented to The **University of Iowa Department of Earth and Environmental Sciences** (**$5,375**) and the **Cornell College Department of Geology** (**$3,687**), and funding to help advance the educational programs of the **Grant Wood Educational Agency's Van Allen Science Teaching Center**

## Bill and Ray present program at Hiawatha Library

On Wednesday, **June 8**, CVRMS Board Members Bill Desmarais and Ray Anderson presented a program on **Rocks and Fossils** to participants in the **Summer Reading Program at the Hiawatha Library**. About 20 parents and students attended the presentation where Ray displayed a variety of rocks and minerals as he explained the variety of rock types and how they formed. Bill followed with discussion of area fossils and dinosaurs, illustrated by many fine specimens. After the presentations the audience came forward for a closer examination of the specimens and a wide-ranging question, answer, and discussion session..

## Bill Desmarais Presents Program at Ely Library

On June 21 Bill Desmarais presented a program on *Dinosaurs* to participants in the Summer Reading program at the Ely Library to about 70 kids and a very few adults. The kids enjoy touching and holding the dinosaur bone casts and real fossils.

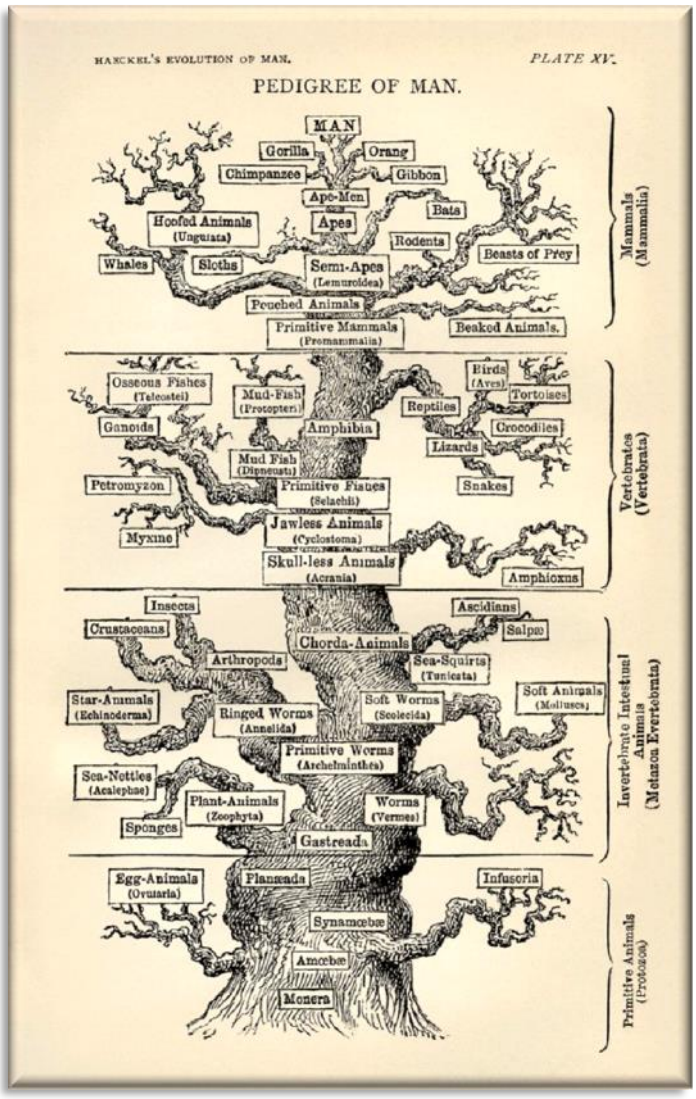
## Bill Takes His Dinosaur Program to Springville

On June 28 Bill presented a program on *Dinosaurs* to an audience of about 35 at the Springville Library Summer Reading Program. The kids were very respectful and listened really well. Bill said that "*after the program I got 6 "hugs" from kids; that made my day.*" The following day Linda Eldred, Director of the Springville Library sent the following note:

> *"--Bill just finished his dinosaur program and it received rave reviews! We always enjoy having him come to our library here in Springville. Great time*," Linda Eldred, Director. **See photos below.**

Students and adults examine fossils at Bill Desmarais' presentation at Springville.

# Ernst Haeckel's 'Tree of Life'




Ernst Haeckel's 1886 *'tree of life'*

Ernst Haeckel's "tree of life", Darwin's metaphorical description of the pattern of universal common descent made literal by his greatest popularizer in the German scientific world. This is the English version of Ernst Haeckel's tree from the *The Evolution of Man* (Published 1879), one of several depictions of a tree of life by Haeckel. "*Man*" is at the crown of the tree; for Haeckel, as for many early evolutionists, humans were considered the pinnacle of evolution. Haeckel's tree was developed by examination of the physical characteristics of existing anf fossilized animals. An article describing how recent use of DNA sequencing has been used to modify this interpretation can be found on Page 5, *"Ask a Geologist."*

# Rutilated Quartz

Rutilated quartz is a variety of **quartz ($SiO_2$)** which contains needle-like inclusions of the titanium oxide mineral **rutile ($TiO_2$)**. These inclusions range in color from gold, to silver, copper-red, or black, and can be illuminated under the light to spectacular effect. Sometimes the inclusions are dark enough to make the quartz appear nearly opaque, and sometimes they are distributed much more sparsely. The inclusions range from thin, sparse, and parallel, to thick, dense, and criss-crossed. The pattern of rutile inclusions in each rutilated quartz stone makes it completely unique. Natural rutile may contain up to 10% iron and significant amounts of niobium and tantalum, accounting for the reddish tone of some of the inclusions, indeed, rutile derives its name from the Latin *'rutilus'*, meaning '*red*'. When the iron content is lower, it may appear darker, or even black in color. While many gemstones, including most varieties of transparent quartz, are valued most when they show no inclusions, rutilated quartz is valued specifically for the lovely patterns the golden needles of rutile can form. Rutilated quartz often has striking patterns and colors, and this combined with its affordability and excellent durability makes it perfectly suitable for jewelry. Most rutile quartz jewelry features cabochon gemstones, but faceted gems are available and are equally stunning. The main source of rutilated quartz is Brazil, with the other important source being India. Other names for rutilated quartz include *"Goddess's Tresses," "Cupid's Net,"* and *"Venus Hair,"* thanks to its hair-like golden inclusions. There is something almost supernatural about its glistening luster, which can be incorporated into jewelry for extra glamour and sparkle! Quartz does not scratch very easily, but it should be kept in a fabric-lined jewelry box or soft cloth away from other gemstones (such as jade, turquoise and pearls) as it is capable of scratching them.

Natural crystals of rutilated quartz

Color variations in rutilated quartz

https://gemstonesbrazil.com/blogs/news/our-rutile-quartz-collection

# How to watch 'Prehistoric Planet'

To kick off the summer season, Apple TV+ has dropped a dino-sized documentary miniseries that you don't want to miss; here's how to watch *"Prehistoric Planet,"* plus a complete overview of its contents and the talent behind the massive project. ***"Prehistoric Planet"*** comes to us from "*The Mandalorian*" honcho Jon Favreau and the producers of the acclaimed documentary series *"Planet Earth"* and takes viewers back 66 million years into the past, shortly before the extinction of the non-avian dinosaurs. The makers of the live-action-CG odyssey aimed to evade a number of wrong and outdated ideas about dinosaurs that have been introduced by popular culture over the decades, so many of the species included in *"Prehistoric Planet"* might not look exactly as you'd think. The series portrays the extinct creatures moving and behaving with an unparalleled level of realism, never before seen in movies or television, and using the cutting-edge tech that Favreau used for his 2019 remake of Disney's "*The Lion King"* and more. It's all about creating a computer-generated illusion of live-action footage, something that BBC's *"Walking with Dinosaurs*" already tried back in 1999 (and later with spinoffs). As it stands, *"Prehistoric Planet"* runs for five episodes, and that should be it. It's already been a huge success though, and with Apple TV+ looking to expand its library of content, we wouldn't be surprised to see a second season happen in the future. If that sounds like your kind of show, read on below to find out how to watch *"Prehistoric Planet"* and learn more about the show's Cretaceous setting. *"Prehistoric Planet*" is exclusively streaming on Apple TV+ and started airing on May 23, 2022. It was marketed as a special five-night event, so the four following episodes debuted on May 24, May 25, May 26 and May 27, respectively. The entirety of *"Prehistoric Planet's"* first (and currently sole) season is available to stream now. Each episode runs for around 40 minutes. Aside from TV spots and some clips, Apple TV+ released two full trailers to promote *"Prehistoric Planet"* ahead of its May 23 debut. The first trailer dropped on April 20 and gave us a meaty two-minute first look at the series' many environments and lifelike prehistoric creatures. Watch it at: https://youtu.be/vnoNeMlNeD0. The second major preview trailer played more like a longer TV spot, clearly outlining the show's structure and its five-day release schedule. It can be seen at: https://youtu.be/w7EvnNIV8_0. As mentioned above, *Prehistoric Planet's* main aim is to update our general understanding of dinosaurs and other prehistoric creatures from the late Cretaceous period. For example, we may think we have a clear image of the coloring that dinosaurs sported (mostly drab gray and brown scales), but more recent investigations and discoveries support the idea that many non-avian dinosaurs were actually quite colorful. The new documentary miniseries wants to answer major, ongoing questions as well, such as how the legendary *T. rex* truly behaved as a responsible parent. While it may be important to modernize certain ideas and concepts about these creatures, *"Prehistoric Planet"* also spends much of its runtime looking at corners of this world which are often overlooked. Each of Prehistoric Planet's five episodes focuses on a specific type of biome, starting out with the dangerous coasts and open waters of the late Cretaceous. The second episode moves on to the deserts of North Africa and the skies above, harsh environments filled with ferocious creatures and enduring survivors. The third part deals with wetland environments and the animals that stayed close to freshwater. The most striking installment for general audiences might be the fourth, which visits snow-covered forests where feathered dinosaurs thrived against all expectations. And to cap things off, the fifth and final episode visits the perilous forests of (what is now) North America. Even though many other creatures are featured in the show, *"Prehistoric Planet"* chooses to focus on dinosaurs, marine reptiles and pterodactyls, the three groups that dominated the land, water and air 66 million years ago. Of course, the infamous *Tyrannosaurus rex* headlines the roster of carnivorous dinosaurs, but other tyrannosaurids, such as the *Tarbosaurus* and the recently discovered *Nanuqsaurus* also make stellar appearances. Small hunters like *Velociraptor* and *Mononykus*, plus an unnamed troodontid also get their time to shine. Perhaps more impressive are the larger herbivores, such as the huge *Dreadnoughtus*, the eye-catching *Olorotitan*, and the classic *Triceratops*. There are many more species to discover in *"Prehistoric Planet,"* but those will surely catch your attention. If we go underwater, we can witness the lives of well-known marine reptiles like *Mosasaurus*, along with mostly unknown species such as *Tuarangisaurus* and *Kaikaifilu*. It's reasonable to think these creatures are limited to only the first episode, but a group of *Elasmosaurus* are featured in the third chapter, too. Finally, pterodactyls ranging from *Barbaridactylus* to the enormous *Hatzegopteryx* are presented throughout the series, with episode three paying special attention to the stunning airplane-size *Quetzalcoatlus*

A herd of titanosaur dinosaurs walks across the landscape

https://www.livescience.com/how-to-watch-prehistoric-planet

# 2022 Auction Venue - Amana, Iowa

The CEDAR VALLEY ROCKS & MINERALS SOCIETY Presents

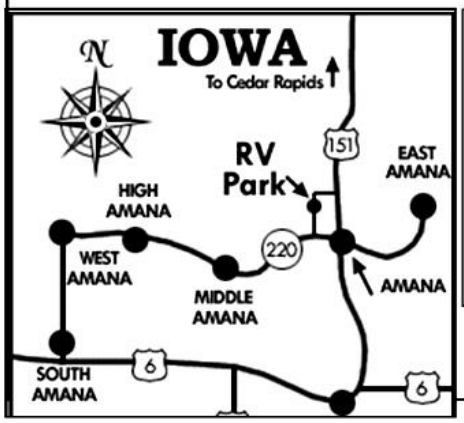
## A TWO-DAY ROCK and MINERAL AUCTION

**Amana RV Park and Event Center, 3850 C St, Amana, Iowa 52203**

**Saturday, October 8 – 9:00 a.m. - 7 p.m.?**

**Sunday, October 9 – 9:00 a.m. – 3 p.m.?**

**Viewing Hours: Fri., Oct. 7, from 5:00 to 7:30 p.m.; Sat. at 7:30 a.m.; Sun at 8:00**

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**THE FOLLOWING IS A PARTIAL LIST OF ITEMS TO BE AUCTIONED**

**EQUIPMENT WILL SELL AT 2:00 ON SATURDAY**

**ROCKS & MINERALS**

AGATE: Bahia, polished; Botswana rough; Casa Grande (cut); Coldwater; Fire rough; Green tree rough; Laguna; Lake Superior; Madascar Dendritic (Mad River Agate); Mexican lace rough; Turritella
Amethyst, cathedral, crystals, clusters, buttons
Apophyllite
Aragonite clusters
Buckets of Rough
Cactus Quartz
Calcite, iridescent (Knoxville IA)
Emerald in matrix
Fluorescent Specimens (Willemite, Calcite, Franklinite), Trotter Dump Franklin N.J
Fluorite, octahedrons & specimens
Geodes, Tobasco, Ocho
Geodes, uncracked and cracked
Herkimer Diamonds
Labradorite Palm-stones
Misc. slabs
Ocean Jasper slabs, rough
Quartz
Rhodochrosite Sphere
Ruby (corundum xls)
Selenite, wands, cubes, xls
Stilbite
Thomsonite
Thundereggs, cut
Tourmaline, black

**EQUIPMENT** (will sell at 2:00 on Sat.)

4 ft. Setup for Tumbler Barrels
Air Compressor
Assorted Parts
Belt Sander
Blower Fan
Combo Units, some with Saws (6)
Drop Saws (3)
Electric Solder Machine
Kiln
Motors
Polish
Sand Blasters, 1 mini, 1 large, 1 small table-top
Saws, 6" to 20" (5 or 6)
Spin Caster
Tumbler (2-barrel Lot-O-Tumbler)
Tumbler Barrels
Tumbler Frames
Tumbler, 4-5 lb.
Vacuum Pumps
Vibro-Tumbler, 2-barrel
Wood Display
Wood Spool Polisher in Case
Wooden Storage Drawers

**FOSSILS**

Arizona Petrified Wood Piece, 100 lbs+
Petrified Wood, full rounds
Blue Forest Petrified Wood, polished
Trilobite, Acadoparadoxides, Morocco

**MISC.**

Magnetic Bracelets
Plastic "5-dram" jars with lids (new)
Rock & Gem magazines

**BOOKS**

The Fabulous Keokuk Geodes
The Wilmington Coal Flora

**JEWELRY.**

Belt Buckle findings
Bolo Ties and findings
Jade Butterfly Broaches
Jewelry Findings

I.D. will be required to obtain buying number. Cash, credit card (2.75% convenience fee) or good check. Two forms of I.D. required for all checks.
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Announcements day of sale take precedence over advertising.
CONTACTS: Marvin Houg 319-350-9435, m_houg@yahoo.com or Sharon Sonnleitner 319-310-0085, sonnb@aol.com; cedarvalleyrockclub.org

https://www.cedarvalleyrockclub.org/auction.html

# The Most Complete Baby Mammoth In North America Has Been FOUND

A whole baby mammoth, named **Nun cho ga**, is only the 2nd found in the world, 1st in North America. The calf's name "Nun cho ga," meaning ***"big baby animal"*** in the Hän language, was frozen in permafrost, resulting in its remains being mummified. Miners working in a gold field in Yukon have uncovered what is being called the "*most complete*" mummified woolly mammoth found to date in North America, officials announced. A joint statement from the Government of Yukon and Tr'ondek Hwech'in First Nation said that miners working on Eureka Creek in the Klondike gold fields found a frozen, near complete woolly mammoth while excavating through permafrost in Tr'ondek Hwech'in traditional territory. Tr'ondek Hwech'in elders have since named the mammoth calf Nun cho ga, which means "*big baby animal*" in the Han language. "*The Yukon has always been an internationally renowned leader for ice age and Beringia research. We are thrilled about this significant discovery of a mummified woolly mammoth calf: Nun cho ga,*" Minister of Tourism and Culture Ranj Pillai said. "*Without strong partnerships between placer miners, Tr'ondek Hwech'in, and the Yukon government, discoveries like this could not happen.*" Tr'ondek Hwech'in Chief Roberta Joseph called it a *"remarkable recovery" for the First Nation and said she looked forward to collaborating with the government on next steps "in a way that honors our traditions, culture, and laws."* "*We are thankful for the Elders who have been guiding us so far and the name they provided. We are committed to respectfully handling Nun cho ga as she has chosen now to reveal herself to all of us,*" Joseph said. Officials called it *"the most complete mummified mammoth found in North America."* The woolly mammoth appears to be a female and is about the same size as a 42,000-year-old infant woolly mammoth called "*Lyuba,*" who was discovered in Siberia in 2007. A partial mammoth calf, named *"Effie,"* was found at a gold mine in interior Alaska in 1948. Officials say geologists from the Yukon Geological Survey and University of Calgary, who recovered *"Nun cho ga,"* believe she died and froze in permafrost during the ice age more than 30,000 years ago. *"As an ice age paleontologist, it has been one of my life-long dreams to come face to face with a real woolly mammoth. That dream came true today,"* Grant Zazula said. *"Nun cho ga is beautiful and one of the most incredible mummified ice age animals ever discovered in the world. I am excited to get to know her more."*

It is the best-preserved woolly mammoth discovered in North America, experts say

The woolly mammoth roamed the icy tundra of Europe and North America for 140,000 years, disappearing at the end of the Pleistocene period, 10,000 years ago. They are one of the best understood prehistoric animals known to science because their remains are often not fossilized but frozen and preserved. Males were around 12 feet tall, while the females were slightly smaller. Curved tusks were up to 16 feet (5m) long and their underbellies boasted a coat of shaggy hair up to 3 feet long. https://www.geologyin.com/2022/06/the-most-complete-baby-mammoth-in-north.html

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| | | |
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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 1st Tuesday at 6:30. June, July, and August meetings are potlucks held at 6:30 p.m. at area parks on the 3rd Tuesday 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

**Next Meeting:**
**JULY 19**
**Wanatee Park Meadowlark Shelter**
**Pot Luck Picnic**
**Geode Cracking & Rock Show & Tell**

Ray Anderson, Editor
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