

Cedar Valley Gems

Cedar Valley Rocks & Minerals Society

Cedar Rapids, Iowa

cedarvalleyrockclub.org

CEDAR VALLEY GEMS

APRIL 2019

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

Next CVRMS Meeting Tues. Apr. 16

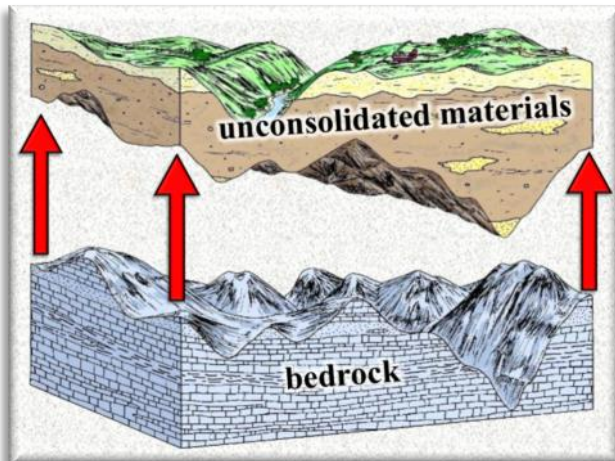
Hiawatha Community Center
101 Emmons St., Hiawatha - 7:15 pm

featured speaker

Rock Doc Anderson

Underground Iowa: What We Have Learned by Looking Below the Surface

CVRMS Vice-President Ray Anderson will revisit a presentation originally prepared for the Black Hawk Gem and Mineral Society in 2017. In an updated presentation he will describe some of the techniques that geologists have used in Iowa to understand the geology below the state's thick mantle of glacial till, loess, and other unconsolidated materials. This includes how they obtain and study drill samples, examine rocks in caves and mines, and use a variety of geophysical methods to interpret what lies below.



This year's Rock Show was another success, with over 4,000 people attending. Final numbers are being calculated and will be discussed in next month's *Cedar Valley Gems*. The Club also hosted the AFMS and MWF and ALAA National Show and Convention at the Ramada Inn. Attending delegates had many good comments about the size and quality of our show (see page 3). **Thanks to everyone who worked so hard this year!**

2019 CVRMS Rock Show Raffle Winners



Amethyst Winner



Dinosaur Winner



Geode Winner



Geode Breaker Winner



Starfish Winner,
with plate she owned

CVRMS Feb. 19 Meeting

Hiawatha Community Center

Order called by President Marv Houg at 7:15 pm

Introduction of new members or guests-three Cornell students Cali Pflieger, Kira Fish, Matt Stivland

Minutes of last meeting reviewed. Motion to accept as published by Jay Vavra, 2nd by Bill Desmarais. Minutes approved.

Treasurer's report by Dale. Checking account balance \$17,474.66. Motion made to approve by Terri., 2nd by Jay. Report approved.

Door Prize won by Julie Whitlatch

Program presented by Cornell students: New Zealand Field trip report.

Old business

Show stuff: Sign up reminder for Saturday Catered dinner \$13 notify Marv. Vendor Phil Oliver is retiring after the show and asks that club members help him pack up the remaining articles. These he will donate to the club for auction. They will be stored at Ray's. Various questions discussed regarding show info. *MSHA training* schedule reviewed.

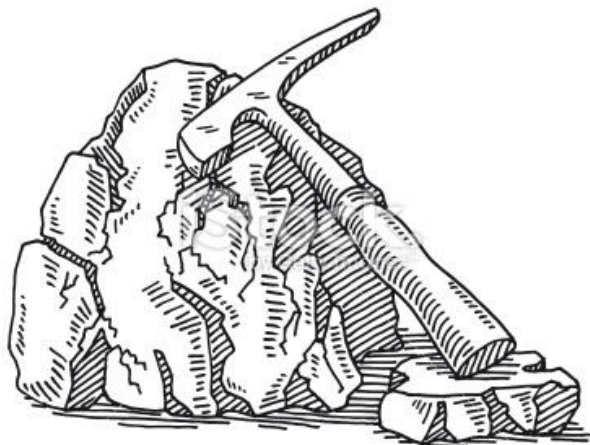
New Business

Computer purchase. Motion made by Rick Austin that club can spend up to \$1600 to purchase a laptop that will meet the club's needs. Second by Ray. Discussion involved various brands etc. Decision that if it meets criteria regardless of brand. Rick will explore the possibilities and report back. Motion carried.

Miscellaneous

Marv reviewed the Gazette article about geodes and our show. Correspondence from Lisa Blunt thanking the club for support. Rick and Sharon built 2 collapsible display cases for show use. A club member Denny Fiser shared his diagnosis with another member and has donated several pieces of jewelry to the club with the request that the money raised be used for scholarships. Thank you to Denny and best wishes.

Respectfully submitted,
Dell James, Secretary



CVRMS Board Minutes Apr 2

Called to Order at 7:15 at the home of Marv Houg

Members present Rick Austin, Marv Houg, Dale Stout, Ray Anderson, Bill Desmarais, Sharon Sonnleitner, Kim Kleckner, Jay Vavra, Dell James

Preliminary show reports discussed. *Attendance;* Adults 2956, children 1216, total 4172. *Profits* about \$9000 plus. All receipts not yet tallied so firm totals not in. ***A successful show with many positive comments received.*** *Observations:* Pebble Pit could use more help. Same for plaster casting and may need more room. Very poor response to arranged field trips. Use of the new program room was much better, but still loud intercom speaker. Roof leak discovered by the night security. *Some suggestions:* Terri Baty suggests that workers be given club shirts that identify them as a helper/worker. Agreed that it was a superb suggestion. Will be considered for next activity. All the same color with simple design. *Next years layout* reviewed. Agreed that the Australian Opal be invited back. *Hawkeye Downs:* still having some communication problems with them. Dale, Marv and Sharon will meet with them hopefully to iron out some difficulties.

Marv suggested that we have a weekend workday to get trailer to his house and clean it out and reorganize.

Theme for next show discussed. Since meteorites have recently been in the news, Board agreed that meteorites would be timely and appropriate. Motion made by Bill Desmarais to recommend to the club that meteorites be the theme for the 2020 show. Second by Jay. Motion passed.

Thank you to Sharon and Ray for their extra work regarding the inclusion of the Midwest Federation and American Federation and making arrangements and extra mileage. And thank you to everyone who helped to make this show a success.

Summer Picnics: June: Ellis Park - ask membership for ideas. Suggestions: flintknapping, rock ID. Marv will call Tim Murphy to see if interested in the flintknapping. July: Squaw Creek, geode cracking. August: Morgan Creek, bingo.

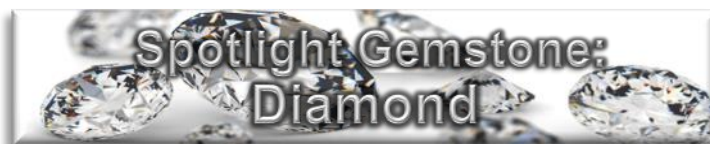
Denny Fiser donated a collection of jewelry that he had made. Discussion about how do we sell and advertise the pieces. Sharon will take pictures and number articles individually. Sale will be for members only. More discussion to follow. May meeting might be the best option with proper advertising.

Auction: September 20 and 21, 2019. Discussion and review of contributors. Auction is full. Jay has sent out contracts. Lists with descriptions are requested as well as pictures, if possible.

Miscellaneous: A request for a talk on rocks and minerals to a Kindergarten class in Williamsburg. Kim Kleckner volunteered to handle it. Bill will provide some rocks to give away. *Bill is working on a trip* to the Omaha zoo sometime in early October. He will provide more definitive information at next meeting.

Motion to adjourn by Jay, second by Bill.
9:25p.m. meeting adjourned

Respectfully submitted
Dell James, secretary



Along with our rock show this year the CVRMS hosted the American Federation of Mineral Societies, Mid-West Federation of Mineralogical and Geological Societies, and American Lands Access Association National Show and Convention at the Cedar Rapids Ramada Inn on March 22-25. The convention and annual meeting went off with very few hitches, and the Cedar Valley club and our show received many positive comments from the 82 attendees of the joint meeting. Below are two letters received by our club:

**From: Donna Moore <mwfsecretary@gmail.com>
To: Sharon S, Ray A, Marv H**

First, I want to again thank you and the club from my husband J.C. and me for the wonderful weekend you provided for our delegates and the MWF and AFMS this past weekend. J.C. is the Conventions and Show Advisory Chairman whose job it is to schedule conventions each year. He wanted a special place when we hosted the AFMS also, which only happens every seven years. We think he found it!

I am attaching (below) a letter I received today from Shirley Leeson, the President of the American Lands Access Association (the lobbying arm of the rockhound organization to keep collecting sites open). She is also one of the last of the "Old Guard" of the American Federation, and the only one able to attend this past weekend. She does not hand out compliments lightly, so please know this is high praise in her letter.

AMERICAN LANDS ACCESS ASSOCIATION



Shirley Leeson
ALAA 2009 President
5113 Blue Ivy, Bulverde, TX 78163

President, Kevin Ponzo
Secretary, Donna Moore
Treasurer, Sandy Fuller

Dear Kevin,

First I would like to congratulate all in the Midwest Federation who contributed to the wonderful show and convention I just experienced. Kudos to the Host Society Cedar Rapids Rocks and Mineral Society for putting on a stunning show and convention.

Thanks to you all for allowing me, as President of American Lands Access Assn (ALAA) to speak at your meeting, it was a privilege. I hope this will forge a new partnership with all of you in the Midwest Federation to help us help you to protect collecting sites, be they public lands or private property. There is strength in number when speaking to government entities and we need the support of all 'recreational rockhounds' to get our job accomplished.

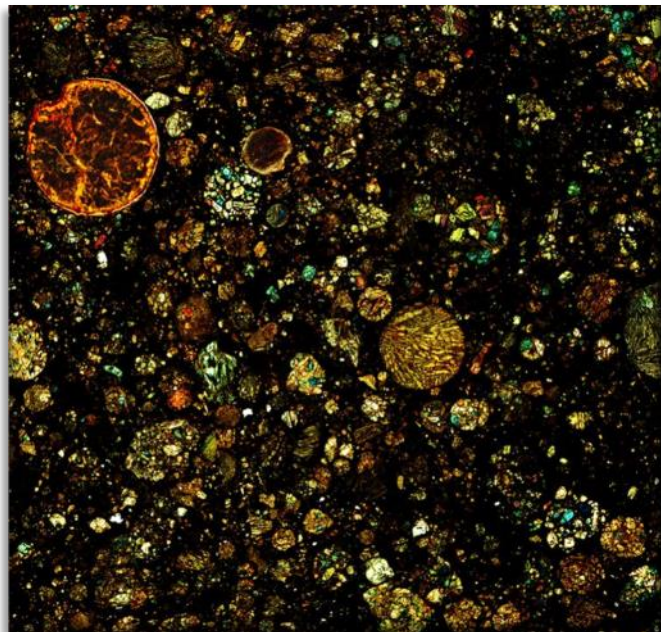
On a different level, speaking as a Past President of the AFMS, (2008) I can say, this was at the top of the list of great shows and conventions, and for that I'm proud I was able to attend. Having been to conventions since 1972 when it was held in Anaheim, California, I do have a little history.

Once again,
....thanks for the memories

Shirley Leeson
2019 recycled ALAA President

On almost all modern birthstone lists, diamond is recognized as the birthstone for April. Diamond is also the gem that marks the 60th and 75th wedding anniversaries. Diamonds are thought to have been first recognized and mined in India, where significant alluvial (river) deposits of the stone could be found many centuries ago along the rivers Penner, Krishna and Godavari. Diamonds have been known in India for at least 3,000 years, and probably 6,000 years. Diamond is the only gem composed of one single element: carbon. Each carbon atom shares electrons with 4 other carbon atoms in a face-centered cubic crystal structure called a diamond lattice. Because of the extreme rigidity of this lattice, diamonds can be contaminated by only a very few types of impurities, such boron and nitrogen. Small amounts of defects or impurities (about one per million of lattice atoms) color diamond blue (boron), yellow (nitrogen), brown (lattice defects), green (radiation exposure), purple, pink, orange or red. Diamond also has relatively high optical dispersion (ability to disperse light of different colors). Diamonds are the hardest material on earth (9 on the Mohs hardness scale): 58 times harder than anything else in nature. Most diamonds formed more than a billion years ago, at high temperature and pressure found only at depths deep in the Earth's mantle, about 90 to 120 miles beneath the surface. Diamonds are brought close to the Earth's surface through deep volcanic eruptions by magma, which cools into igneous rocks known as kimberlites and lamprolites. They are recovered by mining deep into these "pipes" or from rivers and near-shore deposits that include diamonds that nature eroded from the rocks. Diamonds are graded in quality based on the "4Cs:" clarity, color, cut, and carat weight. **Clarity** grades assess the number, size, relief, and position of inclusions and blemishes. The less **color**, the higher the grade. Even the slightest hint can make a dramatic difference in value. **Cut** (proportions, symmetry, and polish) is a measure of how a diamond's facets interact with light. **Carat Weight**, larger diamonds of the same quality are much rarer than smaller ones and are worth more per carat. Although diamonds are made synthetically, their cost of production averages \$2500 per carat, as compared to a cost of \$40 to \$60 per carat to mine the stones.

What in the World?



What in the World is this rock, as you would see it through a petrographic microscope

March's Photo



February's "What in the World" photo was a piece of natural glass. It is a moldavite, a forest green, olive green or blue greenish vitreous silica projectile rock formed by a meteorite impact that produced the Ries Crater in southern Germany about 15 million years ago. It is an unusual type of tektite (bedrock melted and thrown out of the crater during the impact). The impact is thought to have produced about 275 tons of moldavite. Samples with this fern-like structure are considered museum quality.

Rock Calendar CVRMS EVENTS OF INTEREST

2019

April 7 - Waterloo Gem, Mineral & Fossil Show

Featuring Iowa Rockhounds

Waterloo Center for the Arts, Waterloo

Apr. 16 - CVRMS Monthly Meeting

Feature Program

"Underground Iowa: What We Have Learned by Looking Below the Surface"
by Rock Doc Anderson

Hiawatha Community Center 7:15 pm

May 18—TAKO "Rockin' Rocks & Fossils"

River Products' Klein Quarry
Coralville, Iowa

<https://takeakidoutdoors.org/events/rockin-rocks-fossils/?eID=94>

May. 21 - CVRMS Monthly Meeting

Feature Program
"to be announced"

Hiawatha Community Center 7:15 pm

Sept. 21-22—CVRMS Rock Auction

Amana RV Park and Event Center
Amana, Iowa

<http://www.cedarvalleyrockclub.org/auction.htm>

Sept. 27-29 - Geode Fest and Rock Show

Chaney Creek Boat Access
Illinois Highway 96 N
Hamilton, Illinois

<http://www.keokukiotourism.org/>

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.

Rona asked, "I heard that dinosaurs died out gradually and were not killed off by a meteorite. What's the story??"

Rock Doc replied: Most of the public has come to accept that all of the dinosaurs and many other life forms were killed off by the impact of a large meteorite in what is now Yucatan, Mexico, at the end of the Cretaceous period about 65 million years ago. But many researchers continue to believe that dinosaur diversity had been on the decline for a long period of time before the meteorite administered the coup de grâce. In a manuscript recently published in *Nature Communication*, a researcher from Imperial College London and his colleagues combined fossil occurrences data with climatic and environmental modelling to quantify the latest Cretaceous dinosaur habitat in North America. North America was studied because it provides the best available sampled, accurately dated, and stratigraphically continuous record of latest Cretaceous dinosaurs. Taken at face value, the current record (fig. 1) shows a decline in the numbers of dinosaur genera and species from the Campanian to the Maastrichtian (the last two ages of the late Cretaceous before the Yucatan meteorite impact). Taken at face value, this record implies a dinosaur diversity peak during the middle-late Campanian (~78–72 Ma), a decline into the early Maastrichtian (72–69 Ma), with a small increase in the late Maastrichtian (69–66 Ma). But, this record is skewed by the greatly-diminished area of outcropping Maastrichtian rocks in which dinosaur fossils can be collected. Today an exceptionally fossil-rich sedimentary rock sequence extends along a large latitudinal belt ranging from Canada to Mexico (the Western Interior Basin-WIB). On the other hand, exposures of Maastrichtian rocks are smaller and less extensive, with optimal preservation only met in localized areas, such as the Hell Creek Formation in Montana (and lateral equivalents in Alberta, Wyoming, and the Dakotas). These relatively productive Maastrichtian localities occupy a restricted latitudinal belt (~40–50°), while sites at higher and lower latitudes do not meet the same ideal preservation or sampling criteria (i.e. they are generally remote places, far away from research centers, and are characterized by climatic extremes). This western subcontinent, *Laramidia*, was separated from the eastern landmass, *Appalachia*, by the Western Interior Seaway (WIS). Despite forming approximately two-thirds of present-day North America,

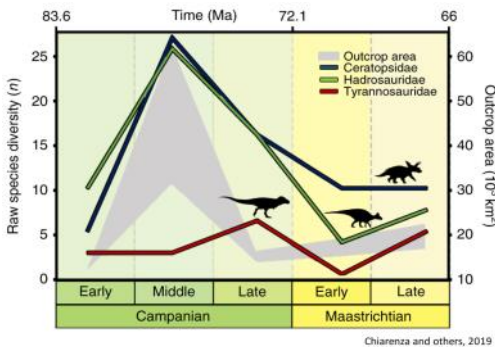


figure 1. Raw diversity trends for the three clades of dinosaurs (*Ceratopsidae*, *Hadrosauridae*, and *Tyrannosauridae*) plotted against outcrop exposure area.

Appalachia has a considerably poorer dinosaur fossil record. One of the reasons for the small number of latest Cretaceous dinosaur-bearing localities in this area (primarily Mississippi, Alabama, and New Jersey) is that these sediments are predominantly marine deposits, and most dinosaurs were living farther inland. Also, these marine palaeoenvironments were generally unsuitable for dinosaur preservation. Maastrichtian North American dinosaur diversity is therefore likely to be underestimated, with the apparent decline a product of sampling bias, and not due to a climatically-driven decrease in habitability as previously hypothesized. In order to examine the impact of this sampling bias the researchers utilized ecological niche modelling to determine the habitat suitability and vertebrate fossil preservation potential for the three diverse and abundant dinosaur clades (animals with a common ancestor) to identify regions in North America that fit those criteria. Their modelling (fig. 2a) yields a close approximation of the raw diversity data, and when applied to all of Cretaceous North America (fig. 2b) showed that dinosaur habitat suitability was stable or actually increased throughout the Maastrichtian, with no evidence for climatically driven habitat degradation and no clear reason for a long-term decline in dinosaur diversity. In other words, dinosaurs were as abundant and diverse as they ever were right up to the impact of the Yucatan meteorite.

<https://www.nature.com/articles/s41467-019-08997-2>

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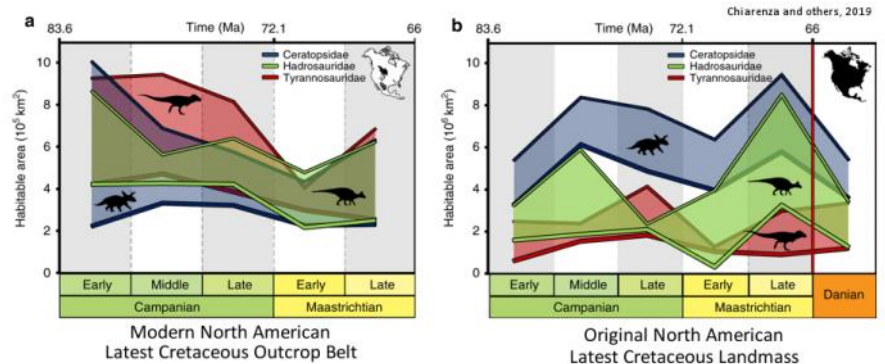


figure 2. Modelled habitable area for the three dinosaur clades (a) in only outcrop area and (b) and for the whole latest Cretaceous North American palaeocontinent.

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Something Odd is Going On in Yellowstone

Something odd is going on in Yellowstone National Park. Geysers that would once erupt every half-century are now spouting steam every week. And, late last year, one slumbering geyser (*Ear Spring*) vomited up 80 years worth of trash, its first eruption since 1957! So, when it



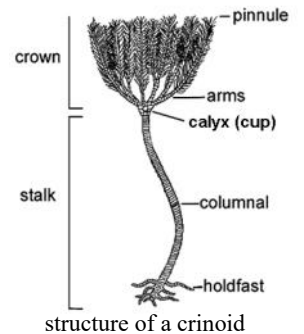
Steamboat Geyser erupts at Yellowstone Park

blew to a height of some 29 feet in September, National Parks officers spent days collecting old coins, beer cans and even a 1930s baby dummy from its surroundings. "An approximately 8-foot diameter area of surrounding ground is 'breathing' — rising and falling by about six inches every 10 minutes," USGS researchers said. The **Steamboat geyser** used to erupt erratically, sometimes after a duration as short as four days or as long as 50 years. Lately, it's been sending spouts of steaming water 295 feet high into the air once every week. However, USGS and park officials have stressed that changes in Yellowstone's hydrothermal features are common and don't reflect changes in activity of the park's volcano. This is because the hydrothermal system is limited to the top 98 feet or so. The magma that triggers volcanic activity resides a few miles deeper. "There has been no significant increase in seismicity nor broad-scale variations in ground movement," the USGS says. The upsurge in activity is happening in the **Norris Geyser Basin**, which has a reputation for being one of the hottest and most erratic thermal areas within the national park. What has changed has been the amount of snow dumped on the park by "Polar Vortex" events. Recent winters have been particularly snowy, adding extra water to water reservoirs. Put simply, the subsurface "kettle" is likely starting to overflow. But, since there is no way to measure these water levels, the USGS says: "We're just speculating."

https://nypost.com/2019/02/21/scientists-arent-sure-whats-happening-at-yellowstone-national-park/?utm_source=quora&utm_medium=referral



Iowa is one of 10 states that does not have a State Fossil. Last year the CVRMS initiated a project to convince the Iowa Legislature to designate the crinoid as Iowa's State Fossil. That bill did not clear the Legislative funnel but did receive some good publicity. This year we are back to try again. The 2019 "Crinoid for State Fossil" bill, **Senate Joint Resolution 12**, is sponsored in the Iowa Senate by Senator Joe Bolkcom and others and in the House by Representative by Mary Mascher and others. The bill was introduced on Feb. 6, **so now it's**



time for all you "friends of the crinoid" to contact your legislators and encourage them to support the bill. Fossil crinoids from Iowa, especially from Le Grand, Burlington, and Gilmore City are among the finest ever collected, and are displayed in museums all over the world. Still alive on Earth today and sometimes called "*sea lilies*," crinoids are actually animals and many can actually swim or crawl. The animals were especially abundant in the Paleozoic Era (250 to 530 million years ago) in the warm, shallow seas that covered Iowa at that time. Consequently, crinoid fossils are preserved in the rocks that underlie much of Iowa, and they can be easily found, even by novice collectors. In fact, they are a

FLOYD THE 'NOID



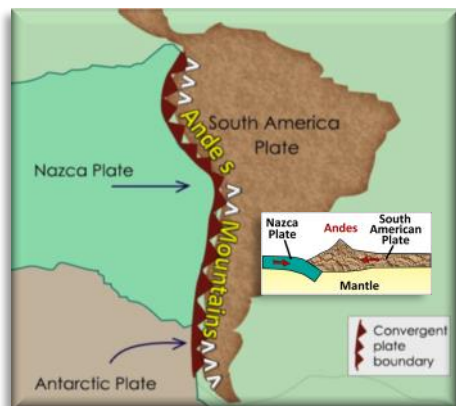
major constituent of many Iowa limestone units. A page on the CVRMS web site provides information about crinoids (both living and as fossils from Iowa) as well as information on the bill and how to identify and contact your legislator.

<http://cedarvalleyrockclub.org/crinoids.html>

Project mascot "**Floyd the Noid**" says "**please contact your legislators, and talk to others about contacting their legislators to support the crinoid bill.**"

Andes Grew to Towering Heights in Two Explosive 'Growth spurts'

Far from a process of smooth uplift, the formation of the Andes Mountains was downright explosive. As the peaks rose skyward along the western coast of South America dozens of millions of years ago, violent volcanic activity rocked the continent. Researchers made the discovery by studying the buried remnants of the continent's tectonic plates.

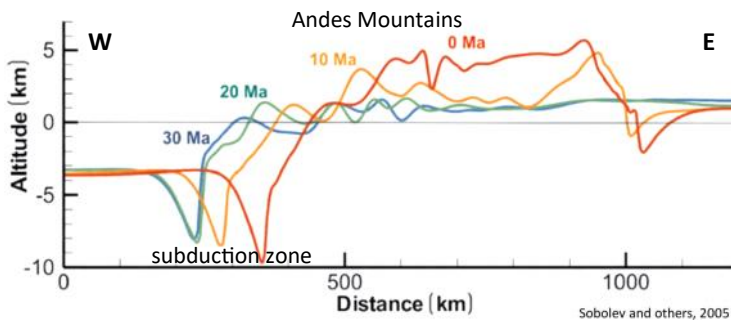


And what the scientists found surprised them. The 4,300-mile-long Andes (the longest continuous mountain range in the world) didn't form in the way that scientists had long thought. Previously, geologists believed that the Nazca oceanic plate, which lies under the eastern Pacific Ocean, had steadily and continuously subducted (slipped under) South America, pushing the ground upward and eventually created the towering Andes. "*The Andes Mountain formation has long been a paradigm of plate tectonics,*" according to professor Jonny Wu of the University of Houston. But after studying the underground remnants of the Nazca oceanic plate, which sit about 900 miles below South America, the researchers learned that the plate did not go through a steady and continuous subduction. Rather, the denser portions of the subducting Nazca plate were at times torn away, leading to an increase in volcanic activity. To double-check their work, the scientists modeled the pattern of over 14,000 volcanic records

in the Andes along this margin, some of which date back to the Cretaceous.

Underground clues

The remains of the subducted Nazca plate are far underground, so how did the scientists study them? When tectonic plates move underground, that is when they sink below Earth's crust and enter the mantle, they sink toward the core, much like fallen leaves sinking to the bottom of a lake. But these sinking plates remain relatively intact, offering clues to how much oceanic plate was subducted. In the case of the Nazca plate, more than 3,400 miles of oceanic crust and attached upper mantle, sunk deep to the mantle. Scientists imaged these subducted plates using data collected from earthquake waves, much like a computed tomography (CT) scan allows doctors to see the insides of a patient. The researchers were able to look back in time with more accuracy than ever before, back to the Cretaceous, the age of the dinosaurs when the subduction of the Nazca plate began. After analyzing these underground tectonic leftovers, the researchers were able to piece together how the Andes formed. The subducting Nazca plate slammed into a density transition zone in the mantle, which slowed the plate's sinking causing it to pile up. This caused portions of the subducting slab to detach, with the dense lower crust and upper mantle sinking into the mantle while the low density upper crust rebounded and rose rapidly, pushing up the Andes and initiating increased volcanism. Their model suggests that the current phase of the Nazca subduction began in what is now Peru, during the late Cretaceous period, about 80 million years ago. After the subducting plate encountered the transition zone and de-laminated, the subduction advanced southward, reaching the southern Andes in Chile by the early Cenozoic, about 55 million years ago. So, contrary to the current interpretations, Nazca subduction has not been fully continuous since the Mesozoic but instead included episodic divergent phases. The study was published online on Jan. 23, 2019, in the journal *Nature*.



E-W profile of the Pacific Ocean floor, subduction zone and Andes Mountains, today, 10, 20, and 30 million years ago (Ma)
Sobolev and others, 2005

<https://www.livescience.com/64571-andes-mountains-plate-tectonics.htm>

The Largest Gold Nugget Ever Found In Alaska

The largest gold nugget ever found in Alaska is named the Alaska Centennial Nugget. It weighs a whopping 294.10 troy ounces (**20.16 pound**), and was found near the town of Ruby, Alaska, in 1998. Barry Clay was placer mining an area along Swift Creek that was known for producing large nuggets. He was pushing dirt with his bulldozer when something unusual caught his eye. He jumped out of the dozer and picked up the object. He immediately knew by the weight that he had unearthed a huge gold nugget. He immediately buried the nugget under a nearby tree until he could figure out what to do



with it. When he finally took it into town for further examination, it was determined that he had found the largest nugget ever found in Alaska, and the second largest nugget ever found in the Western Hemisphere behind the Boot of Cortez found in Mexico. It was named the Centennial nugget because it was found on the 100th anniversary of the Klondike Gold Rush, which brought thousands of men north to Alaska in search of gold. Its discovery in 1998 shows that there is without a doubt lots of huge gold nuggets left to be discovered. They haven't all been discovered, not by a long shot! With the record high gold prices in recent years and the renewed interest in gold mining, there is a very good chance that more big gold nuggets will be found in the very near future. Many other large nuggets have been found in the Ruby Mining District as well, including numerous nuggets that weighed over a pound. Alaska has by far the most commercial mining operations compared to other states, mainly due to its miner friendly regulations in comparison to other states. Alaska has a reputation for large nuggets as well. Overall gold produced here is not as high as other states like California and Nevada, but if you want to find a huge gold nugget in the United States, Alaska is the best place to look.

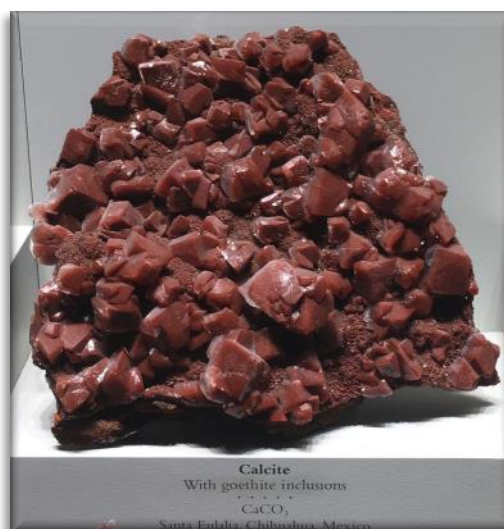
<http://www.geologyin.com/2017/05/the-largest-gold-nugget-ever-found-in.html>

A Gemstone That Looks Like Deconstructed Chocolate Bars



Chocolate calcite from Tsumeb, Namibia

Chocolate calcite may resemble an artful, edible decoration of top Swiss chocolate. These incredibly deep brown crystals are thoroughly infused with microscopic hematite grains, giving them a deep ruddy red color. This is a classic style for calcite crystals from the Tsumeb mine in Tsumeb, Namibia. Measuring 9 x 9 x 4.3 cm, it is a large and very rare specimen. A similar-appearing sample is on display in the Smithsonian National Museum of Natural History. The specimen, from Santa Eulalia, Chihuahua, Mexico, is called **brown calcite** and it contains numerous goethite inclusions producing the brown color (see below). Most chocolate calcites are found as dogtooth clusters. **Dogtooth chocolate calcite** specimens from the Osceola Mine along the Animas River near Silverton, Colorado, are filled with sharp, calcite scalenohedra up to 1.6 cm, which have a dark chocolate-brown coating of an unknown manganese oxide. The crystals



Chocolate calcite in the Smithsonian museum from Santa Eulalia, Chihuahua, Mexico

display a matte luster and are clearly coated, as the underside of the piece shows white/colorless calcite crystals. The **Chocolate Fringes** in Junction Cave in Wombeyan, Australia, are dark brown stalactites edging an equally dark brown flowstone with a contrasting underside of stark white microcrystalline calcite. Analysis showed that the dark brown was bat guano transported to the speleothems suspended in water.

Huge Fossil Discovery Made in China's Hubei Province

Scientists have discovered a "stunning" trove of thousands of fossils on a river bank in China. The fossils are estimated to be about 518 million years old, and are particularly remarkable because the soft body tissue of many creatures, including their skin, eyes, and internal organs, have been exquisitely well preserved. Palaeontologists have called the findings, published in the journal *Science*, on March 22 of this year, "mind-blowing" - especially because more than half the fossils are previously undiscovered species. The fossils, known as the *Qingjiang biota*, were collected near Danshui River in Hubei province. The majority of fossils found are soft-bodied organisms like jellyfish and worms that normally stand no chance of becoming fossilized. More than 20,000 specimens were collected, and a total of 4,351 have been analyzed so far, including worms, jellyfish,



Artist's recreation of the environment of the *Qingjiang biota*, sea anemones and algae. The fossils were apparently "rapidly buried in sediment" during a storm, in order for soft tissues to be so well preserved. Scientists are especially excited by the jellyfish and sea anemone fossils, which researchers describe as unlike anything they have ever seen. Their sheer abundance and diversity of forms is stunning. The fossils are from the Cambrian period, which began 541 million years ago and saw a rapid increase in animal diversity on Earth. Biotic diversity today is something that we take for granted, even though there are indications that extinction rates are sharply increasing. Yet most of the major animal lineages were established in a singular event in the history of life, the Cambrian explosion, the likes of which have never been seen before or after. It also reminds us of our deep kinship to all living animals.

https://www.bbc.com/news/world-asia-china-47667880?SThisFB&fbclid=IwAR21DpFb0LzAPKTrANotQRgcP6ME8F1ieDFaADLwEID_9wH6tS07eGRE60

4 Rare Rubies Found in North Carolina Could Fetch \$90 Million

Rubies are already rarer than diamonds. But star rubies are something incredibly special. In 1990, Jarvis "Wayne" Messer, a self-described "rock hound" living in the Appalachian Mountains of western North Carolina, made an incredible discovery. While combing the native woods for naturally occurring rarities, he unearthed four rough stones that sent shivers through him. From their outward appearance, he sensed that he had come across something very special. Through the efforts of a friend who happened to be an amateur stone cutter, it became evident that Messer, who worked as a trout fishing guide, had made the discovery of a lifetime. To obtain the needed scientific documentation to prove the find, his friends and neighbors "chipped in" what monies they could spare, to deliver his stones to the prestigious Gemological Institute of America in New York City. The GIA confirmed that what Wayne had discovered were indeed remarkably large Star Rubies! A ruby is rare. A ruby with a classic six-rayed star pattern—known as a "star ruby"—is one thou-



sand times rarer still. To find four matching star rubies is nothing short of remarkable! To find them in the United States (star rubies are usually found in Southeast Asia), is virtually unimaginable. In the simplest of terms, the "star" effect is owed to aligned needle-like rutile inclusions and a star is formed when a stone is placed under a light. Although such stars are most often faint or somewhat fuzzy, the stars in Wayne's four stones are vivid. It is a tradition that large and rare gemstones be given names; with this in mind, Wayne's stones became known as the *Appalachian Star* (139.40 ct.), the *Promise Star* (64.16 ct.), the *Misty Star* (52.36 ct.), and the *Smokey Mountain Two-Star* (86.54 ct.) which remarkably has stars on both its top and bottom. Together, the Mountain Star Ruby Collection weighs in at a staggering 342.46 ct! By comparison, the Smithsonian Museum has on display a star ruby described as one of the world's largest. That ruby weighs 138 ct., about a carat less than the Appalachian Star. The value of a ruby is typically determined based on color, cut, clarity and carat weight, but rubies also are evaluated based on their geographic origin.

<http://www.geologyin.com/2018/04/4-rare-rubies-found-in-north-carolina.html>



Cedar Valley Rocks & Minerals Society will hold its **2019 consignment Auction on September 21st - 22nd** in the Morton Building at the Amana RV Park, Amana, IA. The auction assists collectors or families of collectors to dispose of their collections. Knowledgeable club members act as auctioneers. Auctions typically attract about 100 bidders and about 1200 lots will be auctioned.

Viewing is Friday night Sept. 20 from 5:00 - 7:30 pm , Saturday morning Sept 21 from 7:30 - 9:00 am. and Sunday morning Sept 22 from 8:00 - 9:00 am. The **Saturday Auction** runs from 9:00 a.m. to about 8:00 pm, with hot food available during the day and a dinner offered from 5:30 - 6:00 pm. The **Sunday Auction** runs from 9:00 am to about 3:30 pm, again with hot food available.

Cash, good checks and credit cards are accepted for payment. If you can't stay for those special lots you want, you can leave a maximum bid, and a club member will bid for you up to your maximum.

Motel rooms are available in Amana, but they are sometimes sold out. Motels are also available in Little Amana (15 minutes away), Cedar Rapids & Iowa City (each about 25 minutes away).

Since each sale has several consigners, the sale rotates among the consigners. All lots are numbered, and an order of sale is available at viewing on Saturday morning. **Equipment sales** begins at **2:00 pm on Saturday**.

If you have a collection to dispose of, please contact [Marv Houg](#) or [Sharon Sonnleitner](#) (*see contact information on page 12*). The club does all the advertising and sets up the Friday before the auction. A 25% commission is charged for non-members, and 20% is charged for members or families of members who have belonged to the club for at least 2 years.

Profits from the auction provide scholarships for University of Iowa and Cornell College geoscience students and assist VAST (the Grant Wood AEA Van Allen Science Teaching Center).



Cedar Valley Rocks and Minerals Society Fact Sheet

The Cedar Valley Rocks and Minerals Society was founded in 1956!

The Cedar Valley Rocks and Minerals Society has hosted the Midwest Federation Show three times, in 1978, 2004, and now in 2019!

2019 is the first time the Cedar Valley Rocks and Minerals Society has hosted the American Federation Show!

Cedar Valley Gems, the newsletter of Cedar Valley Rocks and Minerals Society, has been published since 1957!

2019 marks the 55th consecutive annual show hosted by the Cedar Valley Rocks and Minerals Society!

The Cedar Valley Rocks and Minerals Society currently counts over 130 members!

Current members of the Cedar Valley Rocks and Minerals Society have given more than 100 presentations to groups such as:

- Educational Groups: K through 12 and Collegiate
- Government Entities: County, State, and National
- Public and Private Clubs and Organizations
- The Iowa Academy of Science
- Boy and Girl Scout Troops
- Religious Groups
- City Libraries
- Businesses
- Nature Centers
- Senior Citizen Groups

The Cedar Valley Rocks and Minerals Society has recently sponsored bus trips for members to visit the Field Museum in Chicago, the Lazzadro Museum in Elmhurst, and the Milwaukee Public Museum!

The Cedar Valley Rocks and Minerals Society has given the University of Iowa and Cornell College \$54,000 for scholarships in the last ten years!

The Cedar Valley Rocks and Minerals Society has given the Grant Wood Area Education Agency's Van Allen Science Teaching (VAST) Center \$17,500 for their geology kits in the last ten years!

In the last ten years, the Cedar Valley Rocks and Minerals Society's donations, including the two above, total more than \$82,500 in donations towards scholarships, science fair prizes, educational materials, and other worthy causes!

Money which the Cedar Valley Rocks and Minerals Society has donated to various organizations and causes is largely raised through the annual show! We thank you for your support and attendance!

Every September, the Cedar Valley Rocks and Minerals Society hosts an auction which provides an opportunity for members to re-home collections, or for estates to sell collections, as well as providing collectors the opportunity to add equipment or new specimens to collections! Sales of geology related items typically total between \$35,000 and \$40,000!

The Cedar Valley Rocks and Minerals Society holds monthly meetings on the third Tuesday of the month at the Hiawatha Community Center (next one is April 16th, 7:15 pm) and we would love to have you attend!

2019 Officers, Directors, and Committee Chairs

President	Marv Houg (m_houg@yahoo.com).....	(319)364-2868
Vice President. ...	Ray Anderson (rockdoc.anderson@gmail.com)	337-2798
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Director '20	Jay Vavra (vavraj@gmail.com).....	447-9288
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Sunshine.....	Dolores Slade (doloresdslade@aol.com)	351-5559
Hospitality	Karen Desmarais (desmarais_3@msn.com)	365-0612
Webmaster.....	Sharon Sonnleitner (sonnb@aol.com)	396-4016

Club meetings are held the 3rd Tuesday of each month from September through November and from January through May at 7:15 p.m., at the Hiawatha Community Center in the Hiawatha City Hall, [101 Emmons St., Hiawatha IA](#). The December meeting is a potluck dinner held the 2nd 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



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