



Rhode Island Mineral Hunters
A 501 (c) (3) HP Organization

BOWEN-LITE

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CUMBERLANDITE –OFFICIAL STATE ROCK



BOWENITE – OFFICIAL STATE MINERAL

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RIMH

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*If anyone would like to submit an article or anything for future publication let me know

Hooksett, New Hampshire



Hooksett - New Hampshire

Upcoming Meeting Details

Executive Meeting date in June is:
Tuesday June 7th. All meetings start at 7pm.

This year meetings will be held at Lou Fazzinas' rock shop
(Apple Valley Minerals)
7 Homestead Avenue
Smith field, RI 02917
*Homestead is off Farnum Pike.

Next general meeting: June 14th at CCRI Warwick

***** Room 1134 *****

We learned at the last meeting about the mineral fluorite. The class was given by TonyCesana . He showed us the many samples from his extensive collection. Also President Wilson advised us about streak plates and other ways to help identify what you find in the field.

Photos of Hooksett Field trip submitted by :

Sherri Blannerhasset



Upcoming Field Trips

- 06/04 Chester Emery Mine – Wright Chester, MA (with SEMMC)
- 06/18 Cory's Lane/ fern fossils, quartz xls Steve Emma
 Burma Road Pyrite, Portsmouth pyrite cubes
- 06/25,26 Gilsum Rock Swap, Gilsum, NH
Possible field trip on Sunday
- 07/09 Hall/State Forest Quarries beryl, pegmatite minerals Joel Russo
 E. Haddam, CT
- 07/23,24 Maine weekend trip tourmaline, lepidolite, smoky
*(Maine Mineral Adventures,
 Details later) ***
- 08/06 Simpson Quarry beryl, columbite, schorl Bill Neal
 So Glastonbury, CT
- 08/20-26 St Lawrence County, NY excellent uvite, dravite, tremolite, Joel Russo
*Week long trip (w/SEMMC). Diopside plus many more
 Details later*
- 09/10 Betts Manganese Mine rhodonite, rhodochrosite Joel Russo
 Plainfield, MA pyrite
- 09/17,18 Sharon, VT, clay concretions, gold panning
*(weekend trip w/SEMMC
 Details later)*
- 10/08 Keating quarry, Acushnet, MA quartz, mica, apatite, calcite, chlorite coatings
- ???? Keating Quarry Lunenburg MA quartz, calcite, kyanite,
 Fuchite

Member Bob Proule submission regarding recent dinosaur footprint protective ordinance in Holyoke, MA

Holyoke : Attempts at plaster-casting, graffiti and other vandalism have prompted the city to establish a law to preserve the [Dinosaur Footprints](#) natural exhibit on Route 5. "What we're trying to do is create an ordinance to protect this exhibit and if need be, we'll have to fine people if they don't follow the rules," city councilor Todd A. McGee said Tuesday. The more than 100, mostly three-toed footprints that scientists say were formed by dinosaurs stomping around millions of years ago can be seen for free on a tilted quarter-acre plain of brown sandstone accessible down a short trail through an entrance in the guardrail. The exhibit is between the highway and the Connecticut River. The exhibit is open generally April 1 to Sept. 30, and in addition to staple visits from college classes and public school students, it draws 20,000 to 30,000 people a year. That's based on traffic counts done at the site by the Pioneer Valley Planning Commission, said Josh B. Knox, superintendent of the west management unit of the nonprofit Trustees of Reservations. The Trustees owns and cares for 116 areas in 73 cities and towns, including a dozen in this area. "Pretty amazing, right?" Knox said at the site Tuesday. But he immediately noticed several rocks on the sandstone floor. "There's some vandalism. These were not here before. They didn't blow here from the road," Knox said. He totes the rocks down to the river. He pointed to another footprint around which it appeared someone tried to hack a circle possibly with the intention of digging down and lifting out the relic. On another footprint, white marks indicate someone tried to come away with a souvenir or sale item by creating a sculptured mold or cast in plaster of Paris. Such hacking serves only to crack the sandstone, Knox said in a video (**see below**). At other spots, including on the wall overlooking the exhibit that bears a sign saying "No plaster casting of footprints". The rock surface is brittle," graffiti has been carved. Someone tossed a cigarette butt in one of the footprints. "I think vandals should choose to have pride in our city so these irreplaceable dinosaur footprints can be preserved for future generations to enjoy," Knox said. The City Council and Mayor Alex B. Morse established the ordinance to protect "Paleontological Resources" earlier this month. Merriam-Webster.com says paleontology is "the science that deals with the fossils of animals and plants that lived very long ago especially in the time of dinosaurs." [Josh Knox discusses the Dinosaur Tracks in Holyoke](#) McGee said councilors learned from police they had nothing specific in terms of a local ordinance to cite in enforcing protection of the dinosaur footprints. The exhibit is important to the city for scientific and tourism reasons, so protecting the footprints with an ordinance made sense, he said. "It is recognized that paleontological sites are unique, nonrenewable and fragile natural resources requiring conservation initiatives," the new ordinance says (**see below**). So any attempt to deface, excavate, cut, loosen, disturb, exchange, transport, export or receive such resources here is prohibited and punishable by fines of up to \$300 per day, per offense, the new ordinance says. A sign posted at the exhibit says that in the early 1970's, Yale University professor John Ostrom identified the tracks as being from three distinct but related dinosaurs: The largest prints, 11 inches to 13 inches long, were from *Eubrontes giganteus*, which stood 15 feet tall and had a 6-foot stride; next was *Anchisauripus sillimani*, with prints of 6 inches to 8 inches; and *Grallator cuneatus*, with prints of 3 inches to 5 inches.

Continued from page 4

The entire Connecticut River Valley – which scientists believe was a sub-tropical swamp 190 million years ago – has long been recognized for its wealth of prehistoric footprints, according to the Trustees' website. Over time, that mud was covered by more mud and silt, which dried out and hardened. Eventually, the tracks were covered with literally thousands of feet of sandstone, and gradually were uncovered through erosion, Knox said. Here's how Gordon P. Alexander, a former city councilor and former chairman of the Holyoke Conservation Commission described it to The Republican in 2011: "The Pioneer Valley is filled with a thick stack of sedimentary rocks, many layers of which contain dinosaur tracks. Think of a deck of cards with dino tracks printed on every other card or so. Basically, if you dig deep enough through the layers, there's a reasonable chance of finding tracks anywhere."

[Holyoke dinosaur footprints ordinance](#): by [Mike Plaisance](#)

http://www.masslive.com/news/index.ssf/2016/05/dinosaur_footprints_in_holyoke.html

Member Steve Emma submission regarding student Scholarship

Hi Steve,

I wanted to say thank you for the scholarship that the rock and mineral society gave me. I finally graduated, receiving a Bachelor's degree in environmental science with a computer information systems, minor. Without that scholarship I may have never gotten this far. .

Thank you again,

Katelynn Howard

Member Bruce Hecker submission regarding SURF Fellowship

RIMH MEMBER RECEIVES SURF FELLOWSHIP

Summer Undergraduate Research Fellowship

Jeremy Hecker is one of three CCRI students to be accepted to the SURF program for the summer 2016. There are up to 25 fellowships awarded each summer to promote interest and stimulate competitive research at the undergraduate level. This year there were nearly 100 applicants for these 25 placements. Jeremy will be utilizing his interests in biology and geology to explore the impact of increased CO₂ on carbon mineralization at microb-mineral interfaces. This project has significance because it explores the capacity of microbes to fix carbon under increasing CO₂ conditions and the relationship of available CO₂ to mineral substrates in coastal seafloor environments. A suite of minerals that are common to coastal marine sedimentary settings will be evaluated at varying pH conditions.

Jeremy will be working with Dr. Dawn Cardace professor, author and researcher at the University of Rhode Island who will serve as mentor for the research project assigned. He will also work with a graduate research assistant. This 10 week program will provide hands on research experience with the focus this year on the impacts of climate variability on marine life. Students will present their work to the larger Rhode Island scientific community on July 29, 2016 at the annual SURF Conference. In addition to field work and testing this program provides field trips, seminars, workshops and networking events. Jeremy is planning to receive his Associate in Science degree from CCRI next spring and transfer into one of the Earth Science programs in the fall of 2017 at the University of Rhode Island. Congratulations Jeremy!!!

Submitted by:

Proud grandparents,

Bruce and Anne Hecker

June gemstone; Pearl

Pearls are organic gemstones that are formed by shelled mollusks; mainly bivalves like oysters and mussels. Pearls are made up of nacre (mother-of-pearl) which is mostly aragonite (calcium carbonate) and conchiolin (complex proteins that form mollusk shells). The aragonite microcrystals build up around an irritant. The name "pearl" is said to have originated from the Middle English word "perle", which in turn came from the Latin word "perna", meaning "leg", thought to be due to the ham-leg shape of the bivalve mollusk.

Natural pearls are extremely rare, incredibly expensive and typically small. Therefore people have developed ways to culture pearls, so that these beautiful gemstones can be enjoyed by many. In cultured pearls, some tissue or a mother-of-pearl bead is introduced into the mollusk shell. If successful, this process induces the animal to form a "pearl sac" whose cells secrete a layer of brownish protein called conchiolin over the irritant. This is followed by the secretion of numerous mineral layers of nacre composed of calcium carbonate in thin overlapping plates. Pearls can come from fresh or seawater mollusks. The beauty of pearls is that they can be plucked from the shell naturally beautiful, fully-formed and displaying perfect luster with no need to be cut or polished.

The oldest recorded reference to pearls in history is the 7,500 year-old "Umm Al Quwain Pearl", which was found in a grave in a place that is now known as the UAE. Before pearls were cultured by man, they were harvested from the Persian Gulf, Sri Lankan waters, fresh water sources in China and the rivers of Europe. Later, Christopher Columbus discovered pearls in South America. When these natural pearls were almost depleted in the early twentieth century, the Chinese and Japanese began to [culture pearls](#) and the rest is history. Nowadays, pearls remain a treasured adornment and are cultured all around the world.

Pearl Gem Properties:

Chemical composition	calcium carbonate ,organic substances and water
Crystal structure	orthorhombic , microcrystalline
Color	white, pink, yellow, silver, cream, golden, green, blue, black
Hardness on the Mohs scale	2.5 to 4.5
Refractive Index	1.52-1.66
Black :	1.53-1.69
Density	2.60-2.85
Cleavage	none
Transparency	translucent to opaque
Luster	pearly
Fluorescence	weak
black pearl:	red to reddish
river pearl :	strong pale green

For more information go to minerals.net



Pearl Gemstone

Fossil of the Month

CRINOID(sea lilly)

Description: Because many crinoids resemble flowers, with their cluster of waving arms atop a long stem, they are sometimes called sea lilies. But crinoids are not plants. Like their relatives--starfishes, sea urchins, sea cucumbers, and brittle stars--crinoids are echinoderms, animals with rough, spiny surfaces and a special kind of radial symmetry based on five or multiples of five.

Crinoids have lived in the world's oceans since at least the beginning of the [Ordovician Period](#), roughly 490 million years ago. They may be even older. Some paleontologists think that a fossil called *Echmatocrinus*, from the famous [Burgess Shale](#) fossil site in British Columbia, may be the earliest crinoid. The Burgess Shale fossils date to the Middle [Cambrian](#), well over 500 million years ago. Either way, crinoids have had a long and successful history on earth.



Crinoids flourished during the [Paleozoic Era](#), carpeting the seafloor like a dense thicket of strange flowers, swaying this way and that with the ocean currents. They peaked during the [Mississippian Period](#), when the shallow, marine environments they preferred were widespread on several continents. Massive limestones in North America and Europe, made up almost entirely of crinoid fragments, attest to the abundance of these creatures during the Mississippian. Mississippian rocks crop out only in the extreme southeast corner of Kansas, but crinoid fossils are common in [Pennsylvanian](#) and [Permian](#) rocks in the eastern part of the state.

Crinoids came close to extinction towards the end of the [Permian Period](#), about 250 million years ago. The end of the Permian was marked by the largest extinction event in the history of life (see [mass extinctions](#)). The fossil record shows that nearly all the crinoid species died out at this time. The one or two surviving lineages eventually gave rise to the crinoids populating the oceans today.

In general, crinoids have three main body parts. The first, the stem, attaches the animal to the ocean floor and consists of disk-shaped pieces stacked on top of each other. These stem pieces come in a variety of shapes--round, pentagonal, star-shaped, or elliptical--and each stem piece is perforated in its center.

At the top of the stem is the cuplike calyx, which contains the mouth, the digestive system, and the anus. The lower part of the calyx is made up of rigid, five-sided plates, arranged radially in rows of five.

These plates form the base of the third part, the food-gathering arms. The arms, which are also segmented, have grooves with cilia, or tiny hairs, that capture suspended food particles and direct them back towards the mouth.

The number of arms varies from five, common in primitive species, to as many as 200 in some living species. The number of arms is always a multiple of five.

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Based on the fossil record of crinoids, especially the details of the plates that made up the arms and calyx, experts have identified hundreds of different crinoid species. Though most crinoids had stems, not all did. Today, stemless crinoids live in a wide range of ocean environments, from shallow to deep, whereas their relatives with stems normally live only at depths of 300 feet or more. These modern crinoids are an important source of information about how the many different extinct crinoids lived.

Rarely are crinoids preserved in their entirety: once the soft parts of the animal decayed, sea currents generally scattered the skeletal segments. By far the most common crinoid fossils are the stem pieces. These are abundant in eastern Kansas [limestones](#) and [shales](#). Only occasionally is the cuplike calyx found. Kansas, however, is home to a spectacular and rare fossil crinoid called *Uintacrinus*, which was preserved in its entirety. These fossils, which were discovered in the [Niobrara Chalk](#) of western Kansas, lived during the later part of the [Cretaceous Period](#), roughly 75 million years ago. *Uintacrinus* is a stemless crinoid, and specimens of these beautifully preserved crinoids from Kansas are on display in many of the major museums of the United States and Europe.

For more information go to <http://www.kgs.ku.edu/Extension/fossils/crinoid.html>

Question of the month: If anyone has any rock, mineral or fossil questions, please pass it to me . I will post questions here and perhaps a member can answer the question for you in the following issue.

