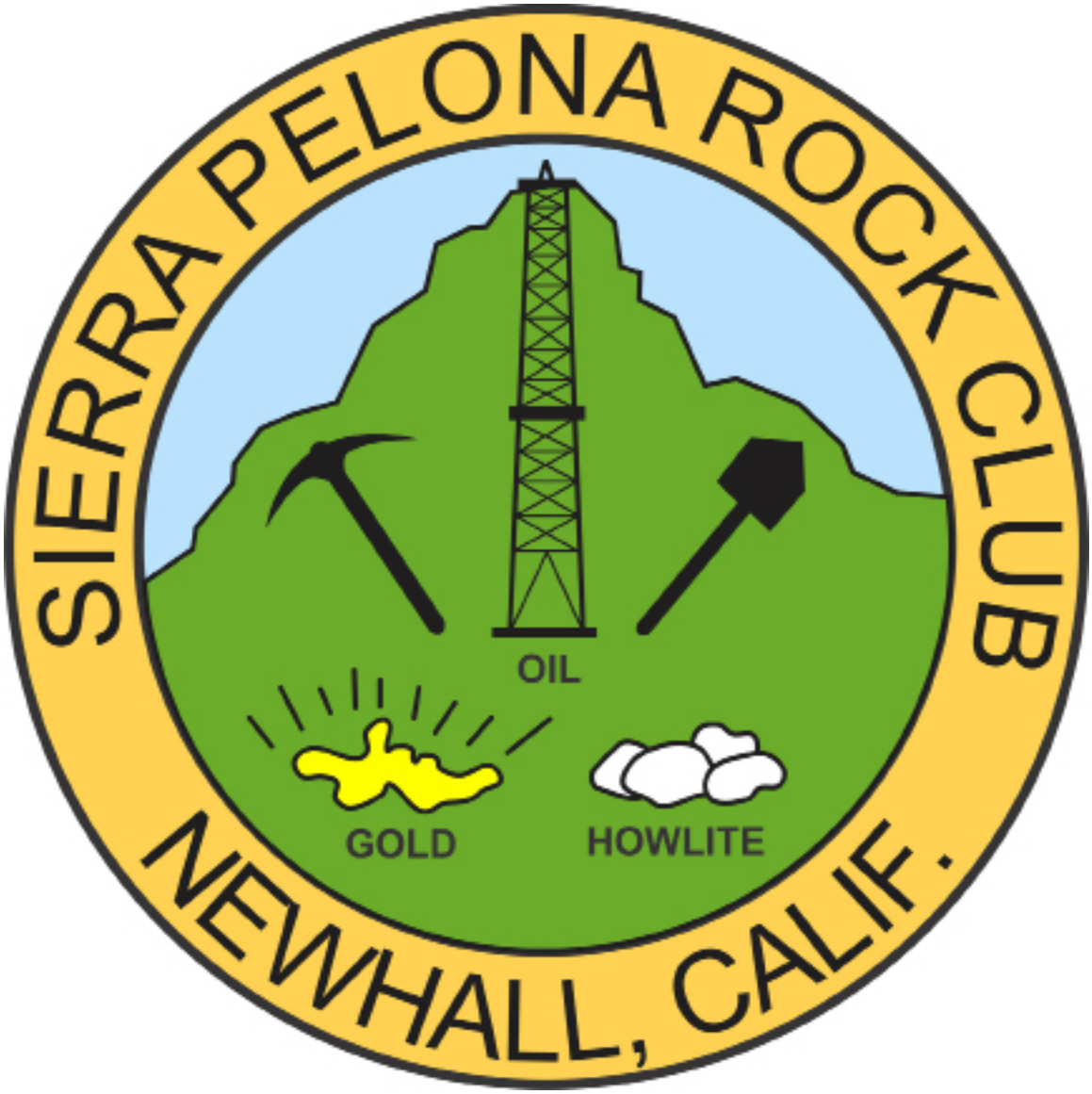
The Sierra Pelonagram



September 2023

... Member of the California Federation of Mineralogical Society Inc. ...

The Sierra Pelona Rock Club is a non-profit organization founded in 1959 with the objective to sponsor activities and promote interest and education in: mineralogy, lapidary, geology, paleontology and related subjects.

September 5th, 2023 Board Meeting

The Zoom meeting opened at 7:06pm. In attendance were Linda Jenkins, Julie Tinoco, Ed Learn, Greg Mazourek, Ron Rackliffe and Heidi Webber. Tina White made a brief appearance before she lost all signal and was unable to rejoin us. A quorum was met.

Heidi asked Ed about the claim filings for the club. This is still in progress. Our insurance is up to date and the Room 209 at College of the Canyons is secured for our meetings. Ed also said that a check to Astro Awards, written in March hasn't cleared the bank yet. Heidi said she'd contact Elena, owner of Astro, as she has a long-time relationship with her.

Julie said she'd like to take the club to Ballarat Ghost Town for the September 23ard field trip. There we can gather Ballarat marble and with the heavy rains we had, there should be some great rock for the picking. She also reminded us that if it is at all damp there, we'll be inundated in gnats and to bring repellents and even head nets. She will email the club about the trip this week. She is also trying to look into a trip to gather rose quartz. Ron said the previous claim owner has given up the claim, so it may be difficult to find the current owner for permissions.

As all business was concluded, Linda asked for someone to make a motion to adjourn. Greg made the motion and Julie seconded. All approved and the meeting concluded at 8pm.

Respectfully Submitted
Heidi Webber for Tina White

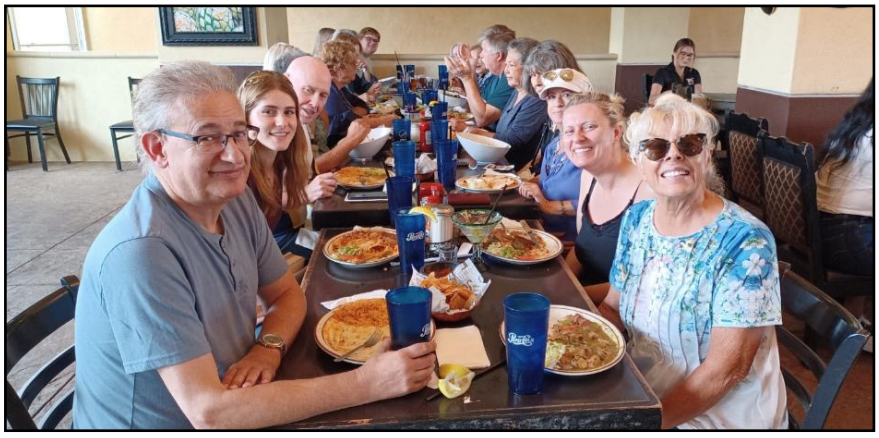
September

Cheryl Cogan
Maria Falasca
Jenn Jenkins
Peggy Stamboulian
Julie Tinoco

October

Omid Aeen

Great! It looks like Omid is the only October birthday and now my list is way off-balance!



End of Summer Luncheon

On August 19, the club had their annual End of Summer Luncheon. It was at El Pescador again and we all had a lovely afternoon on the patio enjoying all sorts of delicious foods and drinks.

Officers:
President – Linda Jenkins
Vice-President – Julie Tinoco
Secretary: Tina White
Treasurer –Ed Learn
Federation Director (CFMS/AFMS) --Greg Mazourek

Chairpersons:
Claim--Linda Jenkins
Donation Rock Table--Dianne Wholleben
Equipment--Bill Webber
Field Trips – Julie Tinoco
Historian -Open
Hospitality – Ron Rackliffe
Membership – Heidi Webber
Website-- Larry Holt
Pelonagram Publisher, Editor – Heidi Webber
Programs –Tina White
Publicity –Open
Sunshine--Yolanda Resnick

The Sierra Pelona Rock Club, is a member of the California and American Federation of Mineralogical Societies, Inc. (CFMS/AFMS). The general club meetings (Open to the public) are at 7:00 PM, on the 3rd Tuesday of each month at:College of the Canyons, 26455 Rockwell Canyon Rd in the Dianne Van Hook University Center, Room 209.(Go to their website for a map, It's in section 14)

Contact the Club or the Sierra Pelonagram Editor at:
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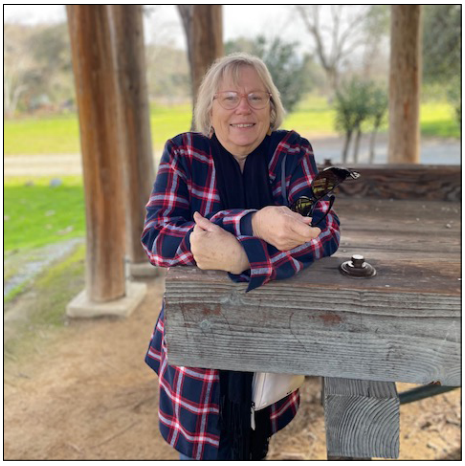


President's Message

Greetings! Hope everyone had a fun summer. School is now back in session and I'm looking forward to some great rock trip events and meetings. By the way, if someone knows of a location that allows refreshments and can hold 30-40 people, please let us know. College of the Canyons is nice, but they don't allow refreshments and we have problems getting our younger members to attend.
Just a thought.

We had a great turnout for the luncheon at El Pescador in Filmore. Having it in the early afternoon was nice. The food was wonderful and the conversation informative.

Our first meeting of the Fall is scheduled for September 19, 2023 at 7:00 p.m. Hope to see you there.

Linda Jenkins
SPRC President

The Carpet Rock in Petit Jean State Park, Conway County, Arkansas
Photo: Jonathan Ball

Carpet Rock

The carpet rock formations are rare structures. Some people are convinced that aliens are the culprit behind the weird formations but there's a geological explanation as well. Fractured sandstone filled with quartz and slowly eroded away leaving the carpet-like pattern.
Those structures typically develop in siliceous coarse-grained sedimentary (sandstone) rocks. The formation of this kind of rock is thought to begin with the fracturing of sandstone and the filling of the resulting cracks with quartz cement. Subsequent weathering erodes the relatively soft sandstone more than the quartz. Eventually the quartz stands out from the sandstone in a carpet-like pattern.

These patterns are abundant in sandstone from this area and are formed when Iron minerals such as Hematite or Pyrite in the sandstone oxidize because water has permeated the sandstone dissolving the iron minerals into a solution and subsequently erosion has exposed the iron mineral solution to oxygen in the atmosphere.

The oxidized solution precipitates between the layers of sandstone, finding tiny crevices where joints exist and form the different color bands within the rock giving the patterns, often in polygonal shapes, which lead to the name "Carpet Rock".

This effect occurs when Quartz forms harder zones in sandstone which resist erosion such as the sandstone from Petit Jean Set Park in Conway County, Arkansas USA.

Boxwork

Boxwork is defined as a honeycomb-like structure that can form in some fractured or jointed sedimentary rocks. If the fractures in the host rock are mineralized, they can become more resistant to weathering than the surrounding rock, and subsequent erosion can produce boxwork structures.

In cave geology, Boxwork is commonly composed of thin blades of the mineral calcite that project from cave walls or ceilings that intersect one another at various angles, forming a box-like or honeycomb pattern. The boxwork fins once filled cracks in the rock before the host cave formed. As the walls of the cave began to dissolve away, the more resistant vein and crack fillings did not, or at least dissolved at a slower rate than the surrounding rock, leaving the calcite fins projecting from the cave surfaces.

Box-shaped and triangular patterns are abundant in the sandstones on top of Petit Jean Mountain. These patterns form when iron present in the rock is oxidized. Iron exists as the minerals siderite, magnetite, hematite and some clay minerals that are present in the Hartshorne Sandstone. At some point in geologic history water filled the pore spaces of the rock formation and came into contact with minerals made up of iron. This caused the iron to go into solution. If the rock becomes exposed to air, then oxygen is added to the solution and causes the iron to oxidize and precipitate out along exposed joints in the rock formation.

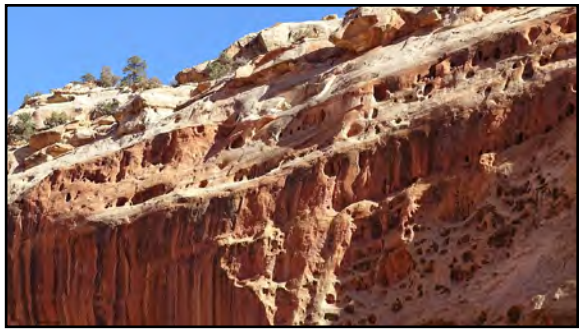
Boxwork on a cave's ceiling at Wind Cave National Park in South Dakota
Photo: YellowstonePark.com

Source: Geology Rocks/Facebook

What Does Weathering Mean?

Weathering is breaking down rocks, soil, and minerals as well as wood and artificial materials by contacting the atmosphere, water, and biological organisms of the Earth. Weathering takes place in situ, i.e. in the same place, with little or no movement. It should therefore not be confused with erosion involving the movement of rocks and minerals by agents such as water, ice, snow, wind, waves and gravity, and then transported and deposited elsewhere.

There are two important weathering process classifications–physical and chemical weathering; each involves a biological component at times. Mechanical or physical weathering involves rock and soil breakdown by direct contact with atmospheric conditions such as heat, water, ice and pressure.



Weathering and erosion on the surface of a rock or cliff form solution cavities, also called tafoni.
NPS / E. Van Ness

The second classification, chemical weathering, involves the direct effect in the breakdown of rocks, soils and minerals of atmospheric chemicals or biologically produced chemicals also known as biological weathering. While physical weathering is emphasized in very cold or very dry environments, where the climate is wet and hot, chemical reactions are most intense. Both types of weathering, however, take place together, and each tends to speed up the other.

How Rocks Are Weathered?

Once a rock is broken down, the bits of rock and mineral are carried away by a process called erosion. No rock on Earth is hard enough to resist weathering and erosion forces.

What are the 3 types of weathering?

Weathering is often divided into mechanical weathering and weathering processes. Biological weathering may be part of both processes, in which living or once – living organisms contribute to weathering.

Physical Weathering

Physical weathering, also known as mechanical weathering or disaggregation, is the process class that causes rocks to disintegrate without chemical change. Abrasion (the process by which clasts and other particles are reduced in size) is the primary process in physical weathering.

Due to temperature, pressure, frost etc., physical weather may occur. For instance, cracks exploited by physical weathering will increase the surface area that is exposed to chemical action, thereby increasing the rate of disintegration.

Where does Physical Weathering occur?

In places where there is little soil and few plants grow, such as mountain regions and hot deserts, physical weathering occurs especially.

How does Physical Weathering occur?

Either by repeated melting and freezing of water (mountains and tundra) or by expanding and shrinking the surface layer of rocks baked by the sun (hot deserts).

Chemical Weathering

Chemical weathering changes rock composition, often transforming them into different chemical reactions when water interacts with minerals. Chemical weathering is a gradual and ongoing process as the rock mineralogy adjusts to the environment near the surface.
The rock's original minerals develop new or secondary minerals. The oxidation and hydrolysis processes are most important in this. Chemical weathering is enhanced by geological agents such as water and oxygen, as well as biological agents such as microbial and plant-root metabolism acids.

Where does Chemical Weathering occur?

These chemical processes require water and occur faster at higher temperatures, so it is best to have warm, humid climates. The first stage in soil production is chemical weathering (especially hydrolysis and oxidation).

Biological Weathering

Biological weathering is the weakening and subsequent breakdown by plants, animals and microbes of rock.
Growing roots of plants can put stress or pressure on rock. Even though the process is physical, a biological process (i.e. growing roots) exerts the pressure. Biological processes can also produce chemical weathering, such as when organic acids are produced by plant roots or microorganisms that help dissolve minerals.

Microbial activity breaks down rock minerals by altering the chemical composition of the rock, making it more weather sensitive. One example of microbial activity is lichen ; lichen is a symbiotic relationship between fungi and algae. Fungi release chemical substances that break down rock minerals ; the algae consume the minerals thus released from rock. Holes and gaps continue to develop on the rock as this process continues, exposing the rock to physical and chemical weathering.

Burrowing animals can move fragments of rock to the surface, exposing the rock to more intense chemical, physical, and biological processes, thereby indirectly enhancing the weathering process.

How Weathering is Different from Erosion

The main difference between weathering and erosion is that there is weathering whereas erosion involves moving to a new location. Both are caused by wind, water, ice, temperature, and even biological action similar factors. They can also take place together.

Read more : https://www.geologypage.com/2016/05/weathering.html#ixzz8CvqVaGiT
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