The Lake George Gem and Mineral Club -

Club News, September, 2007

Meeting Time 9:00 AM September 8

Silent Auction:
For the silent auction, please bring items you are willing to contribute to the club, and a few dollars to buy things with!

Field Trip for the month:
Loren Lowe will lead the field trip to Dave and Lark Harvey's Hartsel claims to collect blue barite. The barite locality is a non-strenuous trip; bring digging tools, food and water.

Rock, Mineral or Fossil of the Month:
In keeping with this year's Denver Show theme, bring interesting examples of Leadville Minerals. Personally collected specimens from the recent Leadville Field Symposium would be great, as well as other interesting pieces, however obtained.

THEFT ALERT – COLLECTOR'S EDGE SPECIMENS

Sadly, there has been another major theft of mineral specimens! The Garden of the Gods Visitors Center in Colorado Springs, Colorado suffered a break-in in the early morning hours of Thursday, August 16th. Thieve(s) smashed through glass entry doors and proceeded to display cases in the Visitor's Center which contained a temporary exhibit of mineral specimens on loan from the Collector's Edge. The thieves smashed the glass display cases and stole 29 pieces of crystallized and nugget gold, a faceted Sweet Home Mine rhodochrosite gemstone, and a Sweet Home Mine rhodochrosite polished rhombohedron. The gold specimens were primarily from Siberian localities, but, the missing pieces also include specimens from California, Alaska, Nevada, and Venezuela. If you are approached by persons offering gold nuggets, crystallized gold specimens or polished Sweet Home Mine rhodo specimens, please try to secure contact information from the individuals and immediately call Steve Behling (Cell: 303-885-6885) or Bryan Lees (Office: 303-279-9724 x-11) at The Collector's Edge.

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NEW CURATOR OF COLORADO SCHOOL OF MINES MUSEUM

At the Leadville Field Symposium August 25, Friends of Mineralogy and Colorado Mineral Society member Bruce Geller announced that he had been selected as the new curator for the Colorado School of Mines Museum. He also encouraged people to come to the museum's open house on September 12th just prior to the Denver Gem & Mineral Show. For more information on the open house, see "Coming Events", below.

Coming Events

Lake George Gem and Mineral Club Meeting and Field Trip for Hartsel Barite. … **September 8**

Colorado School of Mines Geology Museum … **Sep. 12**
Open House, reception, and silent auction of mineral specimens, books, and related items. All are welcome to come; 7:30 to 10 p.m. in the Geology Museum, 13th and Maple Streets on the CSM campus in Golden. "Hors 'doeuvres, Cash Bar, Music". Please call 303-273-3823 so a head count can be generated for the event.

Denver Gem and Mineral Show … **September 14 - 16**

America's second-largest gem and mineral show at the Denver Merchandise Mart – Expo Hall. The theme of the show is "The Leadville Mining Districrt". Friday 9:00 AM – 6:00 PM, Saturday 10:00 – 6:00, Sunday 10:00 – 5:00. See www.denvermineralshow.com for details.

Lake George Gem and Mineral Club Meeting and trip to the Godsend claim … **October 13,**

The Lake George club has been invited to Rich Fretterd's - Godsend claim, where numerous pockets of smoky quartz and amazonite have been found found. This is north of Lake George and requires a high clearance vehicle or carpooling.

New Mexico Mineral Symposium … **November 10 - 11**

28th annual Symposium at the New Mexico Institute of Mining & Technology in Socorro, New Mexico. One of the classic annual events in the SW United States! For further info contact Dr. Virgil Leuth at vwlueth@nmt.edu

New Mexico Geology and Mineral Localities
The New Mexico Bureau of Geology & Mineral Resources has published (on line) a free Rockhounding Guide to New Mexico, which can be downloaded at
http://geoinfo.nmt.edu/publications/fieldguides/rockhound/Rockhound_Guide_3-22-04.pdf

The file is large, so be patient!

For those planning to attend the New Mexico Mineral Symposium, the Guide includes a mile-by mile key to the geological features along I-25 between Albuquerque and Socorro, where the Symposium is held.

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You Might Be a Rockhound If …

- You own more pieces of quartz than underwea;.
- You can pronounce the word "molybdenite" correctly on the first try;
- You find yourself compelled to examine individual rocks in driveway gravel;
- You're planning on using a pick and shovel while you're on vacation.
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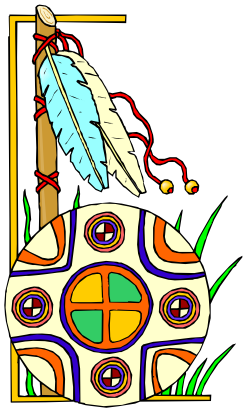

Garden of the Gods Petroglyphs: Messages In Stone

By
Steven Wade Veatch and John Harrington

Introduction

A Ute rock art panel was recently discovered at the Garden of the Gods, a park situated on the northwestern edge of Colorado Springs, Colorado. This scenic location is where humans and nature have come together for hundreds of years. Native Americans were attracted to the beautiful rock formations and camped in the area long ago. Ferdinand V. Hayden, while exploring the area in 1869 for the U.S. Geological Survey, stated in his report to Congress that "around Colorado Springs there is a tract of ten miles square, containing more materials of geologic interest than any area of equal extension in the West" (Scott, 1987).

In 1879 Charles Perkins, President of the Chicago Burlington and Quincy Railroad, purchased most of the land that became the Garden of the Gods. After his death, he left this property to the City of Colorado Springs with two stipulations: first, the land had to be used as a park; and second, it had to remain free to visitors. The Garden of the Gods was dedicated in 1909 as a free city park, and has over 1,340 acres.

Geologic Setting

Spectacular faulting and other geologic forces have created the beautiful landscape that has made the Garden of the Gods so famous. A regional mountain uplift (orogeny) began around 300 million years ago (Huber, 1993). This orogeny produced the Ancestral Rockies—perhaps twice the height of the current Pikes Peak (14,110 feet). A pause in the uplift allowed ancient rivers to relentlessly erode these mountains. These rivers carried material, ranging in size from tiny clay particles to large boulders, and spread it out as immense alluvial fans at the foot of the mountains. This deposit, a red conglomerate, is known as the Fountain Formation (named for the creek south of the park) and is exposed throughout the park.

During the Permian Period the Lyons Sandstone was formed from eolian (wind) deposits during a Sahara-like climate. Erosion of the Lyons Sandstone produced some of the unusual rock formations (Figure 1) in the park. The color change from the red lower member to the white-gray upper member of the Lyons Sandstone is determined by how much hematite (an iron mineral) is present. (Noblet, 1994).

Figure 1. Low-oblique view of North Gateway Rock which is over 300 feet high. This monolith has been eroded from the Permian age red Lower Lyons Sandstone. The top of the picture is west. The sand grains in these rocks are cemented together by silica and hematite, which gives the rock its pinkish color. Photo date 1999 by S. W. Veatch.

About 65 million years ago the Laramide orogeny uplifted the modern Rocky Mountains. When uplift began the ancient Rampart Range fault (beneath the park) was reactivated, causing the horizontal rock layers to dome. The rocks ultimately fractured and moved along the Rampart Range fault. This allowed the rocks on the west side of the fault in the park to remain at an angle of about 50 degrees. The rocks to the east of the Rampart fault were pushed to 90 degrees or more from their orignial horizontal postion. Over time the more resistant rocks became the towers and spires of the Garden of the Gods that attract many visitors each year. The less resistant rocks were eroded away.

The Ute Nation

The Ute people, related to the Paiutes of Utah and the Shoshone of Wyoming, are the longest continuous residents of Colorado. Although their origin is unknown, their presence was first documented in western Colorado approximately 1100 A.D. (Reed, 1994). The Utes are thought to have migrated from the western area of the Great Basin and settled in northeastern Utah, western Colorado, and northern New Mexico. Their territory once covered more than 150,000 square miles of mountains, woodlands, plains and deserts.

The Utes, known as the "Blue Sky People" by other tribes, were skilled hunters and fierce warriors. These early Colorado residents were nomads, living in hut-like structures made of brush and tree branches known as wickiups, or in hide-covered tipis. At times rock shelters were also used. Many traces of the Utes were left in Colorado, including culturally scarred trees (Figure 2), arrowheads, designs on rocks, and occasional sherds of pottery.

The Utes followed game trails through high mountain passes and regularly tracked buffalo to South Park, one of their favorite hunting grounds (Marsh, 1982).

After the introduction of horses by the Spanish (about 1640 A.D.), the Utes were able to expand their hunting areas and increase their mobility. By 1870 the Utes were estimated to be about 3,500 people—not a very large group. All of them had been moved to reservations by the late 1800s.

Ute Rock Art

The Ute people created designs on rocks known as petroglyphs (drawings pecked or carved on a rock surface) and pictographs (drawings painted with natural pigments on a rock surface). Research on Ute rock art focuses on petroglyphs and pictorgraphs dated after 1600. Earlier Ute culture is not documented in any detail.

While working in west-central Colorado, noted archaeologist William Buckles defined 2 style categories (Table 1) for Ute rock art: the Early Historic Ute Style, from approximately 1600 A.D. to 1830 A.D. and the Late Historic Ute Style from roughly 1830 A.D. to 1880 A.D (Buckles, 1971). The Early Historic Ute Style was influenced by: 1) introduction of horses in the 1600s; 2) contact with settlers; and 3) the growth of western trading posts in the 1800s.

The majority of Early Historic Ute style rock art in Colorado is located in the northwestern part of the state. This early style focused on horses, game animals, weapons, and animal tracks. These figures were typically abstract; animals—particularly horses—appear elongated and disproportionate to other figures. Panels of this style were not organized into compositions and commonly depict solitary settings.

The Late Historic Ute Style, from approximately 1830 A.D. to 1880 A.D., developed as contact between Utes and settlers increased. This style has organized compostions and is more realistic than the Early Historic Ute style. Human and animal figures are more detailed and often show motion.

Garden of the Rods Rock Art Panel

The Ute Pass Trail is one of the oldest documented routes of North American Indians. The trail winds through Garden of the Gods, where the Utes spent winters, and continues on through Manitou Springs before going into the mountains (Pettit, 1990). While in the Garden of the Gods, the Utes created a number of petroglyphs.

A recently discovered panel (Figure 3 and 4) in the park is pecked into the Fountain Formation, and is deeply weathered. This pecked panel has realistic and detailed forms and lacks the abstractions and stick-figured bodies found in the early Ute rock art style.

The Garden of the Gods panel consists of a circle within a circle, a deer, what appears to be the front view of a bison, and a thunderbird. The bison was important to the Utes following the adoption of horses and is common in Ute rock art. The majestic thunderbird was important in religious beliefs and symbolized a personal helper that provided personal strength (Cole, 1990). This panel could be a message about hunting in the area several centuries ago….

Early Historic Ute Style 1660 to 1830 A.D.	Petroglyphs more common than pictographs.
	Figures are highly abstract, simple, and not in proportion to each other. Stick figures are common.
	Subjects: depicting people (occasionally have shields and spears) horses, bison, and other animals, including, power symbols such as a bird.
Late Historic Ute Style 1830 t0 1880 A.D.	Petroglyphs and pictographs.
	Figures are more realistic, detailed, and often show motion. Panes are often crowded with figures and symbols.
	Additional subjects such as tipis, bears, trees, and animal tracks. Ute mythology illustrated.

Table 1. Historic Ute Rock Art Styles. Rock art attributed to the Utes is associated with historic periods because archaeological evidence for the presence of Utes before 1600 A.D. is lacking.

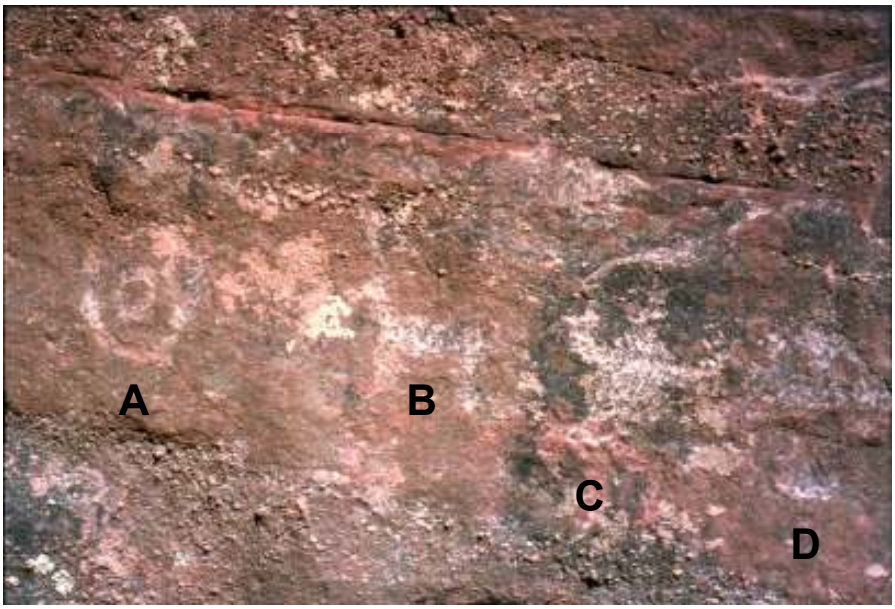

Figure 3. Ute Petroglyphs in Garden of the Gods. Utes once used this ancient site as a camp. From left to right is: (A) a circle within a circle; (B) a deer; (C) the head of a bison, and (D) a thunderbird, a sacred life form in Ute mythology. Photo date 1996, by John Harrington.

Figure 4. Image of Ute petroglyphs in Garden of the Gods with reversed colors (black goes to white). Note bird with outstretched wings is a thunderbird, a powerful spirit helper.

Summary

Today few vestiges remain in the Garden of the Gods that marks the presence of the Ute Indians who once inhabited this area. The recently discovered Ute petroglyph panel is a very important link to these native people. The panel is inspired by Ute religious beliefs and may be a chronicle of their hunting activities. This message from the past will one day fade and disappear as the relentless forces of wind, rain, and frost work to remove this important connection to the early Ute Indians.

References

Buckles, W.G., 1971. The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology. Ph.D. Dissertation, University of Colorado.

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Huber, T. P., 1993. *Colorado: The Place of Nature, The Nature of Place.* The University Press of Colorado, Niwot, CO. 236 p.

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Reed, A.D., 1994. The Numic Occupation of Western Colorado and Eastern Utah During the Late Prehistoric and Protohistoric Periods. In: Across the West: Human Population Movement and the Expansion of the Numa (D. Madsen and D. Rhode, eds). University of Utah Press, 188-199.

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Messages in Stone

By Steven Wade Veatch

Those who are gone once came to this sacred place
of remote canyon walls now quiet with grace.
They made circles of stones to pray and to fast,
to seek a vision for guidance and unite with the past.

Here seekers waited for their spirit guide to appear
who came in many forms to give strength and to end fear.
The seekers knew this place where others once prayed
and had visions of power as long as they stayed.

They left their sacred images to last upon the cosmic rocks:
Dancers, flute players, lizards, and birds left as pecked marks.
An eternal art on canyon walls of symbols, visions, and more
from those who have gone but came here before.

Now the clouds grow dark and are messengers of rain,
they bring a breeze scented with sage over the terrain.
An eagle soars as a guardian spirit above the canyon below
over the messages in stone only the ancients truly know.

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You Might Be a Rockhound If …

- You think the primary function of road cuts is rock collecting;
- You will walk across eight lanes of freeway traffic to see if the outcrop on the other side of the highway is the same type of rock as the side you're parked on.
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SEDIMENTARY ROCKS: SANDSTONE

by John F. Sanfaçon

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Geologists estimate that sedimentary rocks make up only 5% by volume of the outer 10 miles of the Earth's crust, but this figure is misleading in that sedimentary rocks make up 75% of all the rocks outcropping on the continents. The deeper regions of the Earth's crust are obviously igneous or metamorphic in nature, and the ocean floors are largely igneous, i.e. basaltic, in composition, relegating the sedimentary rocks to continental outcroppings. Only three sedimentary species make up the bulk of these outcrops: *limestone*, which we discussed in our last issue, makes up about 10% of the total worldwide (although our 48 states show a much higher percentage), *shale*, which, surprisingly, accounts for a whopping *70%* of all sedimentary outcrops, and ***sandstone***, which comprises the remaining 20% or so.

Sandstone is the name given to *detrital* rocks, i.e. those made up of cemented particles of earlier, weathered rocks) in which *sand-sized grains (1/16 to 2 mm in diameter)* predominate. We are, of course, most familiar with those sandstones composed of *quartz* grains cemented together by *hematite* or *limonite*, giving us tough, compact rocks from dark brown (the famous "brownstones" of New York City residences) to reddish brown (our western U.S. vistas) or tan. Sometimes it is tricky to tell a sandstone from its metamorphosed cousin, *quartzite*. Here's how: when smacked with a geologist's hammer, sandstone will split *around* the quartz grains, while the tougher *quartzite* will split only *through* the grains. Admittedly, cracking a chunk of *quartzite* is no easy task, and when it contains *larger, angular chunks* (a quartzite *breccia*) or *rounded pebbles* (a quartzite *conglomerate*), you're dealing with a truly gnarly substance, which can meet the highest construction standards. The purplish *quartzite conglomerate* known as "pudding-stone", makes beautiful chimneys, façades for homes, and exterior walls.

However, there are two other "sandstones" which meet the grain size requirement, but which have different compositions: 1) *arkose*, which contains *sand-sized feldspar grains* along with the quartz (the feldspar indicates that little chemical weathering took place before cementation, because the feldspar, and any mica, would have been broken down into *clay*) and 2) *graywacke*, which contains abundant angular rock fragments and *clay* as the cementing material. With *graywacke*, the particles are usually poorly sorted, thus accounting for its nickname of "dirty sandstone".

Disseminated sandstones play host to the uranium-vanadium ore minerals of the Colorado Plateau, whereas cavity-riddled sandstones, like those of Hot Springs, Arkansas, are home to world-famous quartz crystals. Seams and veins in sandstones world-wide are where one can find cinnabar, galena, sphalerite, celestine, barite, strontianite, calcite, gypsum, anhydrite, etc. Although not as promising a mineral matrix as, say, limestone (which is more productive because it is more chemically vulnerable), sandstone nonetheless is the source of many attractive mineral species, as well as much of the spectacular scenery in our Far West.

<u>Sources, & Suggestions for Further Reading</u>:

Lutgens, F.K. and Tarbuck, E.J. ***Essentials of Geology****;* Columbus, Ohio: Charles E. Merrill, 1982

Shand, S.J. ***Rocks for Chemists: An Introduction to Petrology for Chemists and Students of Chemistry****;* New York: Pitman, 1952

Sinkankas, J. ***Mineralogy****;* New York: Van Nostrand Reinhold, 1964

Lake George Gem and Mineral Club
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The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts and the great outdoors. The club's informational programs and field trips provide an opportunity to learn about earth sciences, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The club meets the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. **In the winter we meet at 10:00 AM. From April through September, we meet at 9:00 AM, to allow more time for our field trips.**

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are $15.00 for an individual (18 and over), and $25.00 for a family (Parents plus dependents under age 18).

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