PICK&PACK

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July 2015
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CSMS General Meeting

Thursday, July 16th, 7:00 PM

This month's speaker is Mark Jacobson

Topic: Pegmatitic Rare-earth Minerals of Colorado: Species and Identification

Refreshments provided by the Faceting Group

Inside this Issue:

July General Meeting Speaker—Mark Jacobson

Mark Jacobson is a geologist with a BS degree in mineralogy from the Pennsylvania State University in 1973 and a MS degree in geology from the University of California at Berkeley in 1976.

Mark worked as a petroleum geophysicist for Chevron Corporation from 1977 until his retirement to Denver in 2013. Mark has lived in many different locations in the United States as well as international locations. He has been a consulting editor for Rock & Minerals since 1984, the author of Antero Aquamarines (1993) and other books, and is currently president of Friends of Mineralogy, Colorado Chapter. Mark has collected rare earth minerals in Colorado, Texas, Wyoming, Norway, and western Australia.

ABSTRACT

Pegmatitic Rare-earth Minerals of Colorado: Species and Identification

Most of the pegmatitic rare-earth minerals in Colorado are found in the South Platte district, Jefferson County; St. Peters Dome district, El Paso County, Trout Creek Pass district, Chaffee County, and Cotopaxi district, Fremont County. These minerals are informally referred to as the "black uglies" by those who love them. Scientifically they are minerals that are frequently radioactive due to impurities and metamict—meaning that they were formerly crystalline but have been converted to a non-crystalline glass because of their radioactivity. The radioactive elements uranium and thorium are frequently carried as impurities in the rare-earth minerals, thus making them easier to locate by collectors using a beta or gamma ray detector. Collecting and identifying rare-earth minerals are for those people who unusual minerals and are not easily deterred from the challenges of identification.

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CSMS Calendar

July 2015

Thu., July 2—Board Meeting, 7 p.m., Senior Center.

Tue., July 7—Fossil Group, 7 p.m., Senior Center. Jerry Suchan 303 648-3410

Tue., July 14—Micromounts, 7 p.m., Senior Center. Dave Olsen, 719 495-8720

Thu., July 16—General Assembly, 7 p.m., Senior Center

Sept.—May—Pebble Pups & Juniors, 5:30- 6:15 p.m., Senior Center. Steven Veatch, 719 748-5010

Not Meeting—Crystal Group, Kevin Witte, 719 638-7919

Not Meeting—Faceting Group, Paul Berry, 719 578-5466

Jewelry Group, Appointment Only, Bill Arnson, 719 337-8070.

Lapidary Group, Appointment Only, Sharon Holte, 719 217-5683

August 2015

Tue., Aug 4—Fossil Group, 7 p.m., Senior Center. Jerry Suchan 303 648-3410

Thu., Aug 6—Board Meeting, 7 p.m., Senior Center.

Tue., Aug 11—Micromounts, 7 p.m., Senior Center. Dave Olsen, 719 495-8720

Not Meeting—General Assembly

Sept.—May—Pebble Pups & Juniors, 5:30- 6:15 p.m., Senior Center. Steven Veatch, 719 748-5010

Not Meeting—Crystal Group, Kevin Witte, 719 638-7919

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Jewelry Group, Appointment Only, Bill Arnson, 719 337-8070.

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The Senior Center is located at **1514 North Hancock** in Colorado Springs. For more information on any of the sub-groups, meetings, and other CSMS valuable information, go to our website, csms.us

Other Events of Interest to CSMS Members

Fri-Sat-Sun, July 10, 11 & 12, Home Rock Sale, by John Haney, 10:00 AM -- 6:00 PM daily; 303-296-8268, rocksisme@comcast.net **,** John Haney, 4246 Thompson Court (South of I - 70 & East of York St.), Denver, CO 80216. "200 plus types of rough rock & slabs including amber, copal, enhydros & geodes, gemstone bowls & boxes, designer cabochons, crystals & turquoise, lapidary equipment & supplies, Oscar Branson turquoise books."

July 10-12, Durango, CO Gem and Mineral Show, La Plata County Fairgrounds, sponsored by Four Corners Gem & Mineral Club; 10 a.m. – 6 p.m. Fri. & Sat., 10-5 Sun. Free admission..

July 10-13, Gunnison Mining & Minerals Symposium, sponsored by the Friends of the Colorado School of Mines Geology Museum. Hosted (including lodging) at the campus of Western State Colorado University, Gunnison, CO. The symposium will include a dinner and keynote speaker on "Mining History of the Gunnison Country", Friday evening; talks presented on Saturday about mining, geology, and mineralogy of the Gunnison area; and a choice of 3 field trips on Sunday and for those who can stay, on Monday also (so each participant will be able to go on any 2 out of 3 possible field trips). Full information including registration, speaker program, and field trip details will be available very shortly; the best way to see this is to go to the Friends of the CSM Geology Museum facebook page (anyone can access this, you do not have to be a facebook user), https://www.facebook.com/LikeCSMGeoMuseum?fref=ts

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Rare earth minerals are those that contain rare earth elements as an essential part of their composition. Rare earth elements are the set of seventeen chemical elements in the periodic table, specifically the fifteen elements in the lanthanide series that are in row 6 of the periodic table starting with La - Lanthanum and ending in Lu - Lutetium plus scandium and yttrium. Scandium and yttrium are considered rare earth elements since they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties.

Although the number of rare earth minerals exceed 200, in Colorado the most well-known pegmatitic rare earth minerals only number 18, a total which collectors can aspire to find and actually achieve. These eighteen are: aeschynite-Y, allanite-Y, bastnaesite, brannerite, britholite, euxenite-Y, fergusonite-Y, fluocerite-Ce, gadolinite-Y, monazite, polycrase, pyrochlore, samarskite, synchysite-Y, thalenite-Y, xenotime, yttrium fluorite, and yttrotantalite. All of these are rare minerals but in certain Colorado localities are almost common. Associated minerals found with these are frequently zircon and columbite.

The most common (but not necessarily the best) Colorado localities for some of these species are aeschynite-Y at the Clora May pegmatite, allanite at the Big Bertha pegmatite, monazite at the Mcquire pegmatite, fluocerite at the Little Patsy pegmatite, samarskite at the Quartz Knob and Luster #1 pegmatites, gadolinite at the White Cloud pegmatite, polycrase at the Crystal No. 8 pegmatite, brannerite at the California Mine, Mt. Antero,.and bastnaesite at St. Peters Dome.

The presentation will review the composition and mineralogy of some of these species with the focus on how to recognize and identify them after they are collected. Field identification of a specific species is often difficult and frequently requires some effort after obtaining specimens. Some can be identified from simple tests such as specific gravity and fusibility, whereas other require Energy-dispersive X-ray spectroscopy (EDS, EDX, or XEDS) for a small fee from local companies or mineral dealers.

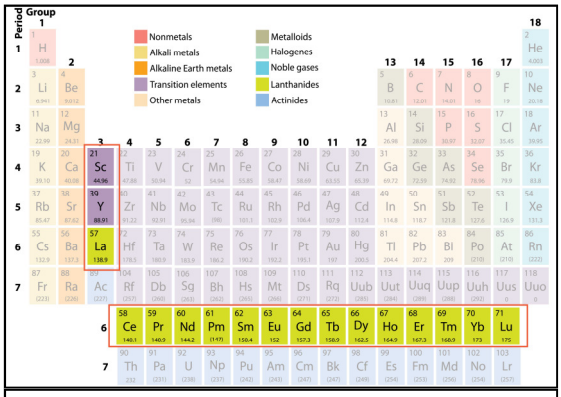

Figure 1. Periodic table showing rare-earth elements in row 6.

Figure 2. View of the Oregon No. 3 (Quartz Knob) pegmatite, historically know for its samarskite nodules.

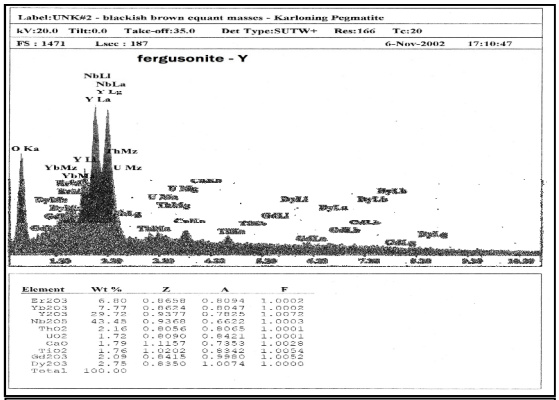

Figure 3. An example of an EDS analysis for fergusonite-Y.

Figure 4. Monazite from the McGuire pegmatite, South Platte district, Jefferson County, CO

THE CRYSTAL PEAK GEM COMPANY

By Steven Wade Veatch and Andy Weinzapfel

Just north of the small town of Florissant, Colorado is a prominent topographic feature shaped like an Egyptian pyramid. Early settlers knew this as Cheop's Pyramid or Topaz Butte. Today it appears on maps as Crystal Peak, an important geological and historical point of interest.

The geology of the Pikes Peak region is dominated by the 1.07-1.09 billion-year-old Pikes Peak batholith, a large body of once-molten rock that was likely derived from the earth's deep mantle and injected upward to a depth of 3 miles or less below the surface. Crystal Peak is part of this batholith (Bryant et al, 1976). The Pikes Peak Granite, extending over an area of 1200 square miles, is exposed at the surface today only because the rocks that once covered it have gradually eroded away.

A common but erroneous belief is that Crystal Peak is an old volcano. Its pyramidal shape is actually due to differential erosion, a process whereby fine-gained granite (aplite) on the peak weathers away more slowly than the surrounding coarser grained variant.

Figure 1. View of Crystal Peak from the Florissant Fossil Beds National Monument. Photo © by S. W. Veatch.

A number of remarkable minerals occur at and near this site in pegmatite (coarse-grained rocks of granitic composition) dikes that contain open pockets, or what geologist's call miarolitic cavities. These cavities form near the earth's crust during the cooling of the parent magma, and allow room for the growth of well-formed crystals inside the cavities (Dietrich and Skinner 1979).

Exceptional mineral specimens from the Crystal Peak area can be found in many of the best national and international museums. Most notable are greenish or greenish-blue euhedral (smooth-faced) crystals of amazonite, a relatively rare and beautiful variant of a common mineral, microcline feldspar. Feldspar, along with quartz, is a major constituent of granite, the most prevalent igneous rock found in continental mountain ranges. Smoky quartz is the black or brown variety of quartz. The color of smoky quartz is related to the small but ubiquitous amount of radioactivity that occurs in the surrounding granitic rock. Smoky quartz crystals from the area are a lustrous, opaque black. Fluorite is a late-crystallizing mineral in pegmatite pockets. Fluorite cubes are the most common crystal habit, ranging from colorless to various shades of pale blue. Color zoning is present, and dark purple is noted along the edges of some fluorite cubes.

The Ute Indians were the first collectors of crystals from this area, used for spiritual purposes. Collectors have been working the area since the 1870s for amazonite, smoky quartz, fluorite, and other minerals (Wobus 1976, Eckel 1997). A. C. Peale, a member of the 1874 Hayden Survey, wrote about amazonite and smoky quartz crystals in the Pikes Peak region while in the area (Peale, 1873). In the 1870s, Dr. A. E. Foote of Philadelphia systematically explored the area, employing 19 men, and shipped many specimens back east. Arthur Lakes, who accompanied Samuel Scudder of Harvard University on an early paleontological investigation of the area, sketched the first regional geologic map of the Florissant valley while sitting on Crystal Peak.

Abram Joshua Randall wrote an article in the *Georgetown Centennial*, February, 1876 about the gem fields of Crystal Peak. It is also one of the earliest known accounts of the Crystal Peak pegmatites (brackets in the transcribed article are used to identify clarifying additions by the authors). The title of the article was: *A Fruitful Field for the Specimen Hunter*. Randall writes:

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"Florissant, in El Paso County, 35 miles west of Colorado Springs, is celebrated for the great variety and abundance of geological and mineralogical specimens found in its vicinity; and it has become a noted resort for tourists passing through that portion of the Territory. . . Eight miles north-east of Florissant are the ragged peaks of the Crystal Mountains . . . A range of rocky peaks, so named from the amount of crystals there found. In the last two years [discovery of locality circa 1874-5] many thousands of pounds have been taken out, the greater part of which have been sold in Manitou, Colorado Springs and Denver, but many have also been shipped east. The crystals formed there, are Smoky Quartz, Orthoclase, Adularia, Amazonstone, Green, Purple and White Fluor Spar, Specular Iron and also a few specimens of Amethystine Quartz, but these last are rare.

These pockets contain from a single handful to several hundred pounds of crystals. From one pocket opened last September [1875], by Mr. Anthony, about 4,000 pounds were taken. Some of the Quartz crystals are of immense size; one taken out last spring by Mr. Disbrough, was about 4-1/2 feet in length, and 10 inches in diameter at the base, and is now in [Reverend Lewis] Hamilton's Museum, in Denver [formerly of Central City in 1869]. During the summer [of 1875], several were found from 20 to 30 inches long.

Last Summer and Fall [of 1875] there were from 25 to 30 miners here constantly, besides some thousands of tourists and excursionists. Deer were plentiful in the neighboring hills, the scenery grand and picturesque, thus inviting the hunter as well as the curiosity seeker to spend a few days among the sylvan shades of these everlasting hills."

In 1908, A. B. Whitmore established the Crystal Peak Gem Company north of Crystal Peak, a successful mining operation that developed mineral property. The Crystal Peak Gem Company mined precious and semi-precious gemstones in the pegmatite cavities found on Crystal Peak. The company was incorporated in Wyoming. A company stock certificate (number 26, issued April 22, 1912) is signed by president Anna M. Saunders and Albert B. Whitmore as the secretary. Anna Saunders is listed in the *1906 Colorado Business Directory* as the proprietor of Burlington House, 101 W. Masonic, Cripple Creek, Colorado. Burlington house was probably a boarding house serving the gold mining district.

Figure 2. Early photo of the Crystal Peak Gem Company's operations on Crystal Peak. Notes on the photo: "Camp of Crystal Peak Gem Co. G. W. Weed of company on right. J.D. Endicott on left. Specimens of quartz, amazonite, etc. in shelves. Coplen Dome, a granite knob, beyond. Photo date Aug. 1913. Photo by D.B. Sterrett. Credit: U. S. Geological Survey.

The Mining Investor, in 1911, announced the Crystal Peak Gem Company was owned large acreage in Teller County, north of Florissant and "has sent its president and general manager A.B. Whitmore and three miners to perform annual assessment work on its claims on Crystal Peak (The Mining Investor)." The announcement continued by listing the gemstones found and that they were in demand.

According to the 1917 *Biennial Report* issued by the Colorado Bureau of Mines, small quantities of stones were produced by the Crystal Peak Gem Company, including amazonite, smoky quartz, clear quartz, topaz and phenakite. Specimens from Crystal Peak and ore samples from the mines in Cripple Creek were sold in the curio stores of Denver and Cripple Creek. The Crystal Peak Gem Company conducted mine tours. The gem company had a store operating at 508 Bennett Avenue, the main street of Cripple Creek.

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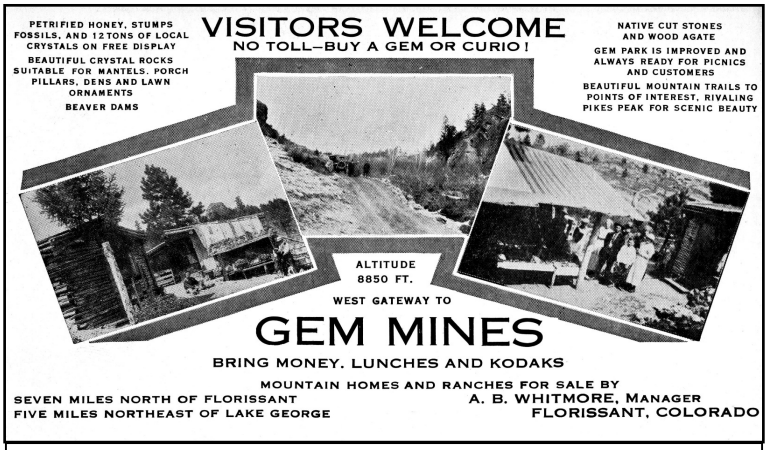

Figure 3. Postcard depicting view of the gem mines as a tourist attraction. From the collection of S. W. Veatch Image © S. W. Veatch.

Successful collecting in the area continues today, as witnessed best by the discovery of several gigantic smoky quartz crystals on the Godsend Claim in 2002 by Rich Fretterd. These unique specimens currently reside in the Pikes Peak Historical Society museum in Florissant. More recently, an exceptional amazonite-smoky quartz cavity, known as the Icon Pocket, yielded possibly the finest known plate, or cluster, of these minerals in the world. This treasure was found on the Smoky Hawk Claim by the Dorris family. More crystal specimens await discovery in the Crystal Peak area.

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The Gravel Pit

- We are looking for a volunteer to lead the trip to Joe Dorris' Smoky Hawk Claim on Thursday, July 23rd. If you are interested, please contact Sharon Holte, at sharonrocksco@gmail.com.
- A big "Thank You" to Pete Giacobbe for volunteering to help distribute the newsletter each month! Pete will be handling the mail out portion of the newsletter.
- Don't forget, there will not be a newsletter or General Meeting in August. Information about a casual get together at the Golden Corral will be emailed next month.
- We're looking for some nice mineral photographs to post in the newsletter to fill random empty space. If you have photographs, that you would like to share, **that are not copyrighted** (i.e., belong to you) please email them to csmseditor@hotmail.com. Please include the name of the specimen, locale, and any other pertinent information.

PALEONTOLOGICAL RESOURCES PRESERVATION: HOW THE FOREST SERVICE DISCOURAGES ROCK AND MINERAL CLUBS FROM COLLECTING INVERTEBRATE FOSSILS AND PLANTS

Mike Nelson csrockguy@yahoo.com

DISCLAIMER: THE FOLLOWING IS MY OPINION AFTER READING, AND TRYING TO UNDERSTAND, *PART 291 PALEONTOLOGICAL RESOURCES PRESERVATION* RULES EFFECTIVE MAY 18, 2015, AS PUBLISHED IN THE FEDERAL REGISTER.

Recently the Federal Register published new rules for collecting common invertebrate and plant fossils on land managed by the US Forest Service (USFS), and presumably soon to be copied by the BLM. In my opinion these new regulations are among the most inelegant that I have observed in the federal bureaucracy. I just want readers to understand that the new fossil collecting regulations will/could affect fossil collecting field trips by individuals, rock and mineral clubs and university/college/K-12 students. The implementation of the rules marks a sad day in the world of science.

The new laws have their birth in the fossil collecting rules and regulations implemented under the *Omnibus Public Land Management Act of 2009 Paleontological Resources Preservation subtitle (**The Act**).* I have explained the 2009 Act in previous articles and noted that the law was written to protect vertebrate fossils on public lands, mainly from commercial collectors, but also disallowing individual collecting privileges without a permit. I supported most, but not all of the, tenets of the Act.

One part of the 2009 law that I supported was the "fact" that common invertebrate and plant fossils could be collected by recreational collectors:

Subtitle D--Paleontological Resources Preservation

SEC. 6301. DEFINITIONS.

In this subtitle:

***CASUAL COLLECTING- The term `casual collecting' means the collecting of a reasonable amount of common invertebrate and plant paleontological resources for non-commercial personal use,** either by surface collection or the use of non-powered hand tools resulting in only negligible disturbance to the Earth's surface and other resources. As used in this paragraph, the terms `reasonable amount', `common invertebrate and plant paleontological resources' and `negligible disturbance' shall be determined by the Secretary.*

However, the USFS has reinterpreted the 2009 Act as mandating similar collecting rules for invertebrate and plant fossils as The Act provided for vertebrate fossils. The USFS believes the new onerous rules will provide "*for the preservation, management, and protection of paleontological resources on National Forest System lands (NFS), and insures that these resources are available for current and future generations to enjoy as part of America's national heritage*." It appears to me that the USFS unilaterally decided to change the intent of the 2009 Act that was approved by the US Congress. Instead of following US Law (The Act) the agency went "overboard" and came up with a new set of rules that appear almost unenforceable, and are a disincentive for using geology as a gateway for young adults to move into STEM (science-technology-engineering-math) fields. I believe the agency paid scant attention to the differences between protection for scarce dinosaur bones and protection for tens of thousands of species (hundreds of thousands of individuals) of invertebrate fossils. And, they ignored the tenets of the 2009 Act.

The new regulations became law on May 18, 2015, on USFS lands and likely will soon be followed on lands managed by BLM and other agencies. The draft edition of these rules came out a year ago and several people offered comments as to the ridiculous and unworkable nature of the proposal. It seems as if the agency paid

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little attention to concerns of citizens (and what the 2009 Act promised for collectors of invertebrate and plant fossils) and the new laws appeared April 18 in the Federal Register and are now with us permanently.

I have always tried to work, for decades, with federal land agencies in protecting fossil resources. However, this time the USFS has simply gone overboard with trying to define and protect items that need little or no protecting. It is easy to understand the 2009 Act written to protect vertebrate fossils. I guarantee that you will not understand fully the new laws written to protect thousands of invertebrate fossils and plants. We are concerned about the reading and comprehensive understanding abilities of our K-12 students. These new rules are written to confuse scientists and others with advanced degrees. And yet the USFS notes that it is not their responsibility to explain and educate but that collectors need to read and understand the Federal Register.

As I interpret a portion of laws, and this is a stretch, USFS land is open to casual collecting of common invertebrates unless posted. But, take the term *causal collecting*---what does that mean to you? To me the terms indicates perhaps the Colorado Springs Mineralogical Society (CSMS) Fossil Club (or just a single individual) planning for a couple of weeks to head out to some fossiliferous limestone with a crack hammer, a big pry bar, bags, etc. to have a great time on the slopes. The 2009 Act defined it as: ***The term `casual collecting' means the collecting of a reasonable amount of common invertebrate and plant paleontological resources for non-commercial personal use.*** However, the USFS in their infinite wisdom decided not use the term hobby collecting or recreational collecting (that is what most rock and mineral club members do) but to redefine causal collecting *as generally happenstance without intentional planning or preparation.., the view of casual collecting as an activity that generally occurs by chance* ***without planning or preparation****.* So now I am thinking causal collecting involves tiptoeing through the daisies enjoying the colors and looking down and spying a “common fossil” and deciding to pick it up and stick it in your pocket. The terms *without planning or preparation* really bothers me as I ALWAYS prepare when heading out into the field! Anything with planning would require a permit (more later). Why would the USFS decide to use a definition from Merriam-Webster’s Dictionary when Congress had defined causal collecting in the 2009 Act?

So, causal collecting involves *common invertebrate and plant paleontological resources which means plentiful and not rare or unique. The final definition also incorporates a geographical factor of wide-spread distribution, which means that the resource is distributed over a relatively large geographical area. This final definition also clarifies that not all invertebrate and plant paleontological resources are common; some are not common because of their context or other characteristics and, therefore, are not eligible for casual collection.*

Therefore, an Authorized Officer of the USFS will decide which invertebrates are common-----I certainly see this as a problem. For example, I am out pounding on some limestones looking for some “common” snails and as usual I bag several hunks of the rock. I get back to the garage and begin to trim the rocks and there is a brachiopod shell not on the “common” list. Well, I have broken the law several times---what happens to the brachiopod shell? In olden days I would take it to a museum and turn it in for study. Today I stick it on a hidden shelf or chuck it in the valley (fearing the Authorized Officer would close the locality due to a rare species). And, I probably collected “too many” snails (broke the law), and I had planned to go hunt for fossils (broke the law), and on and on.

In constructing the rules, the agency simply did not understand about the nature of invertebrate fossils---large numbers of different species often occur together and often in prodigious numbers of individuals. What Authorized Officer is going to find time to study all fossil-bearing rocks in their District and then decide about collecting opportunities on these outcrops? I am frightened that the USFS will not have adequate time to study outcrops and therefore decide to simply close the rocks to causal collecting. But of course since I plan for my collecting trips I am not eligible for causal collecting.

The term non-commercial personal use as used in the definition of casual collecting clarifies the types of use al-

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lowed under casual collection, and means uses other than for purchase, sale, financial gain, or research. OK, so a causal collector cannot sell fossils collected; however, a collector cannot use his collection *for research*! Whoa. I spent my career working with students and amateur collectors of all ages and encouraged individuals with interesting fossils to read and study the primary literature, make critical decisions, and then write up and submit an article for a journal, newsletter, or present a poster/podium talk at a professional meeting. Now the agency is telling me (and the students) that a permit is required for this activity! That action would turn off anyone interested in providing information about the interesting fossil to the professional community or the general public*. Research is likewise not considered to be a personal use and, therefore, requires a permit.* Overkill and a lack of understanding that not all research takes place in a research university.

There is also a reasonable amount provision: *A person may remove up to 100 pounds in weight per calendar year, not to exceed 25 pounds per day. Development of this reasonable amount criterion reflects, in part, the view of* ***casual collecting as an activity that generally occurs by chance without planning or preparation.*** This definition of causal collecting is not following the intent of the 2009 Act approved by congress.

I have collected in many localities where different geologic units are stacked one on top of another and many/most contain common invertebrate fossils. Perhaps the fossils are embedded in a limestone or sandstone and one needs to return to their garage in order to use a splitter to help extract the individuals. A strong back might be able to haul out 75 pounds of rock hunks. But wait, the agency states t*he reasonable amount limit established for casual collection is an absolute specified amount, and is not a "per locality" or "per bed" or "per fauna" limit. Amounts collected at different locations, from different beds, and/or representing distinct faunas would all contribute cumulatively to the established total reasonable amount annual limit… The reasonable amount limit would apply to the entire amount of material removed in a year, including fossils and* ***any enclosing matrix***. Treating invertebrate fossils in matrix the same as collecting petrified wood (petrified wood has its own collecting rules based on weight) is ridiculous. And*, if* you trim rocks in the field be warned that *discarded material would be considered as disturbed surface material in context of the negligible disturbance criterion.* In my opinion, this rule will be impossible to enforce unless a "Ranger" checks you on the way out of the field. Again, upon returning home I would trim the matrix off the fossils and perhaps even extract the complete fossil from the matrix---that is an important rule in paleontology: do not try and extract the fossil in the field as Mike's Law states that is will break right down the center. So, after working the fossil out of the matrix at home I now have an 8 oz. specimen rather than 15 pounds as I discarded 14.5 pounds of matrix in the back yard rock pile! What a way to discourage hobby collectors.

And, if you want a real chuckle (the sad but true thing) read the following regulation*: Non-powered hand tools mean small tools that do not use or are not operated by a motor, engine, or other power source. These tools are limited to small tools that can be easily carried by hand such as geologic hammers, trowels, or sieves, but not large tools such as full-sized shovels or pick axes.* OK, you can collect with geologic hammers or small shovels but not with pick axes or full-sized shovels. Personally I would love to see a court case where a person was issued a ticket because the shovel handle was too long? Wonder what the size range is?

There is also the onus of non-causal collectors (virtually everyone except the daisy tiptoers as far as I can tell) filing for a permit. My students and I usually collected fossils, including specimens for the University collections (requires a permit), at times when weather permitted. In today's world the collecting would come to a standstill since the turnaround time on a permit from an Authorized Officer would not be in a day or two! In addition, public rock and mineral clubs such as CSMS have active groups of young people (Pebble Pups and Earth Science Scholars) and adults (Fossil Interest Section) who love to go on collecting field trips but who now must apply for a permit to collect fossils since the groups often study their specimens (research) with the intention of submitting information for peer review and publication. Yes, young people can do research! The new rules prohibit causal collecting if there is any hint of research.

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I am greatly disappointed in the agency as I strongly believe their actions will discourage children and young adults from deciding on a career in a STEM field. Geology and paleontology are often the gateway for students entering a field of science as a career. What are children interested in? Fossils, especially dinosaurs, are well known to millions of children. They are not interested (usually) in algebraic equations---but they might decide on a career in math later in life as they study fossils. The United States badly needs STEM career students and I believe the agency overkill regulations are discouraging these students from entering science and are detrimental to educating students. The agency's response: *The Department expects that casual collectors, including children and students, would be* ***encouraged by the knowledge that uniform standards now exist for casual collecting (***try to explain that to an 8 year old) *that will be applied consistently across the Agency. The respondents' suggestion that conditions established for casual collecting would serve as a disincentive for collection and result in loss of interest and further pursuit of knowledge in paleontology and science are* ***conjectural and not substantiated***. Well, I don't believe the agency is out working with these students on a daily basis!

Individuals who wish to develop paleontological expertise or education by collecting paleontological resources in a manner beyond the scope of conditions established for casual collection are not precluded from doing so under the regulations; however, a permit would be required.

If you, the reader, thought the above was sort of ridiculous wait until you try and decipher the permit system. If I read the law correctly (and perhaps I am too dense to understand), any collecting other than causal would require a permit---remember no planning and no research. OK, the provisions (some shown below) of the permit system are absolutely amazing:

Applicants for permits must provide the following records and information to the Authorized Officer in support of an application. Show citation box:

(a) ***The name, titles, academic or professional affiliations****, and business contact information of the applicant and all persons who would be named on the permit;*

(b) The applicant's ***current resume****, curriculum vita, or other documents that support an applicant's qualifications;*

(c) A ***detailed scope of work or research plan*** *for the proposed activity. This must include maps, field methods, associated records, estimated time and duration of field season, proposed field party size, and specific information regarding storage, stabilization, and curatorial arrangements for collected specimens and data;*

(e) ***Identification of a proposed repository for collected specimens****, including written verification that the proposed repository agrees to receive the collection of paleontological resources and associated records and acknowledges that all costs will be borne by the applicant and/or approved repository, unless otherwise addressed in a separate written document;…*

(1) ***The applicant has a graduate degree in paleontology*** *or a related field of study with a major emphasis in paleontology from an accredited institution, or can demonstrate training and/or experience commensurate to the nature and scope of the proposed activities;*

(2) The ***applicant has experience in collecting, analyzing, summarizing, and reporting paleontological data and experience in planning, equipping, staffing, organizing, and supervising field crews*** *on projects commensurate to the type, nature and scope of work proposed in the application;* and finally,

Permit applications are anticipated to require an average of ***5.5 hours*** *to complete, and permit reports are anticipated to require an average of* ***13 hours*** *to complete.*

(Continued on page 11)

As I try to interpret the permit system I really have lost all faith in the USFS. For example, examine the CSMS where the Fossil Group and an active Pebble Pups/Earth Science Scholars might explore for fossils on USFS land. First of all, any exploration would require a permit since this obviously is not causal collecting as both groups like to conduct research on fossils with some publication—but examine the permit regulations.

Many/most rock and mineral clubs do not have members with an advanced degree in paleontology;

Even fewer clubs have members with experience in *collecting, analyzing, summarizing, and reporting paleontological data and experience in planning, equipping, staffing, organizing, and supervising field crews;*

So perhaps (again trying to understand the regulations) if a club did apply for a permit for the Fossil Interest Section members, someone would need to:

locate an approved repository for fossils the group might collect--- Fossils stored in repositories remain the property of the United States and storage cases cost money! Museums might not want the fossils, and if they did, who would pay for the cases?

It would cost "someone" 5.5 hours to complete each permit application, and another 13 hours to write up a final report.

So, what the USFS has done is effectively shut down informal collecting of invertebrate fossil and plants by any organized group such as rock and mineral clubs and their affiliates if members wanted to conduct research on collected specimens.

If the Pebble Pups/Earth Science Scholars Take an "educational Field Trip" for causal collecting the Authorized Officer may withhold specimens that have been determined not to be common invertebrate and plant paleontological resources---take it away from the kid.

On the other hand, the law seems totally unenforceable and civil disobedience (generally unintentional) will be rampant. **Instead of fostering cooperation between agency personnel and community groups and educational institutions, the law will create another schism that the country does not need.**

So what is the answer (although I doubt the agency is listening)? First of all, use the original definition of causal collecting as listed in the 2009 Act and get rid of the provisions about *happenstance without intentional planning or preparation.., the view of casual collecting as an activity that generally occurs by chance* ***without planning or preparation***. Better yet call it by what it really is---hobby collecting or recreational collecting. Eliminate the permit system unless the agency is dealing with bona fide researchers usually associated with universities or museums. Encourage fossil collecting by children and encourage hobby collectors to visit a university or museum with interesting finds and discoveries. And if the agency has an area of rare or uncommon fossils simply close the area to collecting---judiciously examining the "rare" fossils. Previous to the enactment of these new collecting rules the USFS/BLM had a perfect solution to protecting rare and critical invertebrate fossils---they simply closed the area to collecting. An exemplary case is the ammonite beds near Kremmling, Colorado. Seeing the need to protect these exceedingly large and beautiful specimens from further collecting, the Agency simply closed the outcrops and posted the land. The weight limitations of collecting, modeled after the petrified wood regulations, need elimination. Petrified wood is usually 100% percent fossilized wood. Invertebrate fossils usually have matrix attached---why should the matrix count as part of a limit? And finally, revise the section on degradation of the landscape and the size of the tools. Emphasize the need for collectors to backfill holes and keep damage to a minimum. Educate collectors rather than threaten people with all these onerous "size of tools" laws.

I find it almost, but not quite, humorous that the USFS is worried that some kids out digging fossils are going to create more damage to the surface than one rogue mountain biker, or horseback rider, or ATV rider. Around Colorado Springs

(Continued on page 16)

PEBBLE PUPS CORNER

PIKES PEAK PEBBLE PUPS AND EARTH SCIENCE SCHOLARS FIELD TRIPS AND EVENTS

JULY 9, 2015 Event: Jurassic World Movie Event
Time to be determined
Proposed field trip on Thursday July 9 to see the movie at the Cinemark Theater on Cinema Point/Powers, and then go to a nearby restaurant for lunch and a discussion of the movie. We want to see if there is enough interest in making this a field trip in July. Please respond so we know who is interested. Please email Julie Shimon at julieshimon@gmail.com. Julie will let you know the specifics once we have determined the level of interest.

JULY 11, 2015 Field Trip: Cripple Creek and Victor Gold Mine, Cripple Creek, CO
9:00 am to 2:30 PM
We will meet at the CC&V visitor center on Bennett Avenue. Bring lunch, water, and collecting equipment. CC&V will provide a bus to the collecting sites that are full of collectible materials. This is a once-in-a-lifetime collecting opportunity. Only 12 pre-registered Pebble Pups/EES may attend and board the bus. In order to board the bus you must have a boarding pass that will be sent to you by return email from Steven Veatch. Parents will have to wait for the kids in Cripple Creek, where there are plenty of diversions. We will be able to collect fluorite, gold ore specimens, and carbonized wood fossils. We will also be able to make a collection of igneous rocks. To reserve your spot, you must email Steven Veatch at steven.veatch@gmail.com

JULY 25, 2015 Event: Florissant Heritage Days
10:00 am to 3:00 pm
In 1870, Judge James M. Castello moved his family from Fairplay to the Twin Creeks area and established a ranch and trading post. Two years later, Castello petitioned for a post office and named it Florissant (French for flower) after his hometown in Missouri. There were about 70 homesteaders in the area at the time. Today, an annual celebration called Heritage Day commemorates the area's rich history. This year's all-day event is scheduled for July 25. Heritage Day is the biggest event of the year in Florissant, a town with a population of about 100. As many as four times that amount is expected to flock to the area for the annual celebration. Visitors and local town folk are encouraged to head over to the Pikes Peak Historical Society Museum, Castello Street Coffee House, Florissant Cemetery, Hornbek Homestead and Old Historic School House. For even more excitement, one can head up to the Fossil Beds and get a glimpse of the distant past. The old Historic School House will be the focal point of the event. Pebble Pups and Earth Science Scholars will help man a tent and demonstrate rocks, minerals, and fossils. There will be a group trip to the Florissant Fossil

Quarry to collect Eocene Age plant and insect fossils. At the conclusion of the Heritage Day we will stop by Veatch GeoScience offices and lab south of Florissant. Please email Steven Veatch if you plan on attending at steven.veatch@gmail.com

AUGUST 8, 2015 Event: Pikes Peak rocks, minerals, and fossils.
10:00 AM to 2:00 PM
The Cripple Creek & Victor Gold Mining Company has hired the Pikes Peak Pebble Pups to provide a day of rock, mineral, and fossil fun. We will be manning a demonstration booth. Your help is needed to man the tent in either 2 hour intervals or for the entire day. Please email Steven Veatch if you plan on attending at steven.veatch@gmail.com if you can come and the shift you can work. The event will occur in front of the CC&V visitor center on Bennett Avenue in downtown Cripple Creek. After the event we will collect gold ore near the Vindicator Mine.

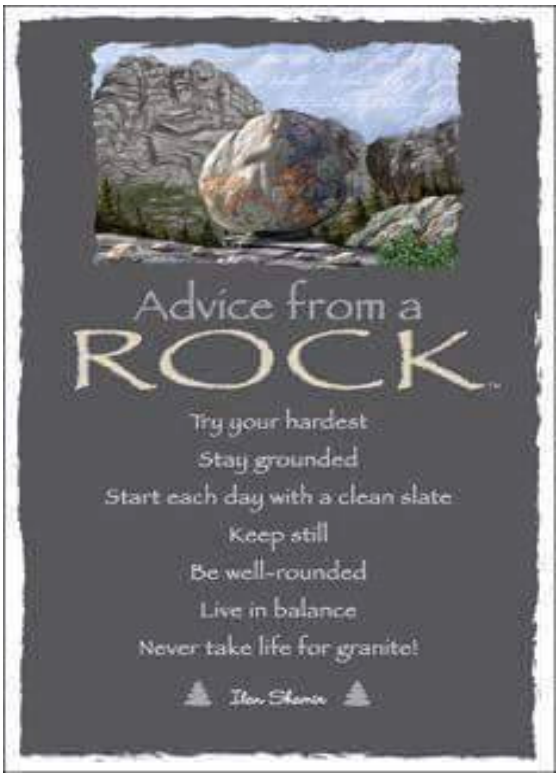
(Continued on page 13)

AUGUST 15, 2015 Field Trip: Hartsel, Colorado
9:00 AM to 2:00 PM
We will meet at the little store in Hartsel (Trading Post) and will travel to a private ranch to excavate a large petrified wood stump. Some of the wood is a blue agate while other parts are opalized. Bring lunch, water, tools, and plastic buckets to haul away your petrified wood. This is a perfect field trip for the entire family. Please email Steven Veatch if you plan on attending at steven.veatch@gmail.com

SEPTEMBER 19, 2015 Field Trip: Denver Gem and Mineral Show
10:00 AM to 2:00 PM
This will be the 5th annual tour, as a group, of the gem show in Denver. This includes a guided tour of all of the educational cases. We will then meet in the speaker's room at noon to listen to fellow Pebble Pups and Earth Science Scholars present their research. After the presentation we meet for lunch at the show. Please email Julie Shimon if you plan on attending at julieshimon@gmail.com

OCTOBER 3, 2015 Field Trip: South Park Adventures
10:00 AM until we are done
This will be a combined archaeological search for Indian and early cowboy line shack artifacts. We will also visit sites where we can collect botryoidal chalcedony, fluorescent chalcedony, scheelite (tungsten ore), zebra rock, actinolite, chert, blue quartz, trace fossils, and petrified wood. Of special interest are egg-shaped black chert nodules that are both very collectible and unusual. Meet at Wilkerson Pass at 10:00 am, Bring lunch, water, and tools. Please email Steven Veatch if you plan on attending at steven.veatch@gmail.com

NOVEMBER 7, 2015 Field Trip: to the Denver Museum of Nature and Science
10:00 AM to 2 PM (Date is tentative)
This is the third annual behind-the-scenes tour of the museum. Because we will be visiting collections that are not available to the public, the tour is limited to only 20 Pebble Pups and Earth Science Scholars. This part of the tour is about one hour. Students will rejoin parents for lunch at the T. rex Café and a tour of the paleontology collections. The date is tentative. Please indicate your interest in this field trip by emailing Julie Shimon at julieshimon@gmail.com



Other Events of Interest to CSMS Members—continued

July 16-18, Rocky Mountain Federation of Mineralogical Societies Convention and Mineral and Gem Show, Cody, Wyoming.

July 31-Aug. 2, Creede Rock & Mineral Show; 10 a.m. – 5 p.m., free admission; at the Underground Mining Museum, Creede, CO. See www.creederocks.com .

Aug. 13-16, Contin-Tail Rock Swap/Gem & Mineral Show, Buena Vista, CO

Tues., Aug. 18, 3:00 p.m., DMNS Earth Science Seminar**, " The dynamic early Paleozoic world of Colorado: Faunas, environments, tectonics, and large earthquakes**", by Paul Myrow, Colorado College. Free lecture, is museum admission not required.

Aug 21-23, Lake George Gem and Mineral Show (sponsored by the Lake George Gem and Mineral Club) and the **Woodland Park Gem, Mineral, and Jewelry Show**, Aug. 20-23.

Sep. 12-20, Denver Coliseum Mineral, Fossil, and Gem Show, see http://www.coliseumshow.com/ .

Sep. 13-20, Colorado (Fall) Mineral and Fossil Show, Ramada Plaza Hotel (formerly Holiday Inn - Central Denver), 4849 Bannock St, Denver, CO; see http://www.mzexpos.com/colorado_fall.html .

Tues., Sep. 15, 3:00 p.m., DMNS Earth Science Seminar**, ""The WHAT of conodont science: Insights into Permian oceans and beyond"**, by Charles Henderson, Univ. of Calgary. Free lecture, is museum admission not required.

Sep. 18-20, Denver Gem and Mineral show, at The Denver Mart, 58th Ave. and I-25 (ext 215), sponsored by the Greater Denver Area Gem and Mineral Council; dealers, exhibits by clubs, individuals and museums nation-wide, lectures, demonstrations, and kids' activities; theme, "Minerals of the American Southwest". 9-6 Fri., 10-6 Sat., 10-5 Sun. See http://www.denvermineralshow.com/ .

Sept. 24, Friends of Mineralogy Colorado Chapter bimonthly meeting; speaker TBA.

Steps in Stone: Walking Through Time, at the University of Colorado Museum of Natural History, CU campus, Boulder. "A new exhibition that features real fossil tracks and trackways from the University of Colorado Museum of Natural History collections". Open 9-5 weekdays, 9-4 Saturdays, 10-4 Sundays; closed on university holidays. Exhibit runs through December 2015; see http://cumuseum.colorado.edu/.

SECRETARY'S SPOT
by Melanie Glascoe

Minutes of the Colorado Springs Mineralogical Society General Meeting
June 18, 2015

Minutes for the June General Meeting were not submitted.

2015 CSMS Officers

Mark Lemesany, President

Jean Miller-Luce, Vice President

Melanie Glascoe, Secretary

Ann Proctor, Treasurer

Lisa Kinder, Editor

Ariel Dickens, Membership Secretary

Doreen Schmidt, Member-at-Large

Yam Yamiolkoski, Member-at-Large

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Kim & Bodie Packham, Show Chairs

Sharon Holte, Field Trip Director

TBD, Science Fair Chair

Frank & Ellie Rosenberg, Librarians

Georgia Woodworth, Social Committee

Ann Proctor, Store Keeper

Jackson Pierce, Webmaster

Sub-Group Responsibilities for Refreshments for General Assembly Meetings

Feb. Jewelry	Mar. Lapidary	Apr. Micromount
May Board	June Crystal	July Faceting
Aug. Picnic	Sept. Fossil	Oct. Jewelry
Nov. Lapidary	Dec. Christmas Party	

CSMS FIELD TRIPS

by Sharon Holte

Below are the June and July scheduled trips for rock hound season 2015. **Please review the information for each trip on the Event Calendar at www.csms.us.** Click on the trip link for the specific day to view the trip overview and trip detail sheet.

If you have suggestions or would like to lead a field trip, please contact Sharon Holte, Field Trip Director, at sharonrocksCO@gmail.com. **If you are available to lead the field trip on July 23rd, please contact Sharon, as soon as possible.**

Saturday, July 11: Calumet Mine, *near Salida, Colorado.* Please see the website (www.csms.us) calendar for more details.

Thursday, July 23: Smoky Hawk Claim, *Lake George area, Colorado* — Trip Leader: **NEED VOLUNTEER**; Meeting Place: Lake George Ranger Station, Trail Creek Rd./Hwy 94 (just off of 24); Meeting time: 9:45 a.m.; Limited to 40 attendees.

Saturday, July 25: Topaz Mountain, *Lake George area, Colorado* — Trip Leader: Joe Dorris/Mark Lemesany. Meeting Place: Topaz Mountain Gem Mine parking lot; Meeting time: 9:00 a.m.; Limited to 30 attendees.

Saturday, August 1: Last Chance Mine, *near Creede, Colorado* — This field trip is to a commercial collecting site, which was an historic mine near Creede. The mine appeared in the recent movie "The Legend of the Lone Ranger". Collectors will be required to pay $2.00 per pound in order to keep their finds. Trip Leader: Jeanne Miller; Meeting Place: Last Chance Mine; Meeting Time: 8:30 a.m.

Saturday, August 22: Peridot Claim, *near Hartsel, Colorado* — This field trip is to the CSMS Peridot Claim and is a joint field trip with the Gold Prospectors of Colorado. It is part of our field trip sharing efforts to provide more opportunities for more Rock Hounds. Trip Leader: Ronald (Yam) Yamiolkoski; Meeting Place: Bayou Salado Trading Post, Hartsel, Colorado; Meeting Time: 9:00 a.m.

Saturday, September 19: New Hope Amethyst Claim, *near Canon City, Colorado* — This is a joint field trip with the Canon City Geology Club, to their club claim. A fee of $5.00 per person is required. Trip Leader: Phil Spry; Meeting Place: Dirt parking area on west side of Hwy 9, approximately ¼ mile north of Hwy 50. (About 8.5 miles west of Canon City); Meeting Time: 8:30 a.m.

(CONTINUED FROM PAGE 11)

the claim jumpers and night diggers seeking “mineral wealth” are the chief destroyers of the landscape, not legitimate mineral collectors.

As stated previously, I have long been a supporter of federal agencies protecting resources, where needed, but also working with concerned citizens to allow multiply use of agency land. The rules now in place for collecting of invertebrate fossils and plants are simply mind boggling, and in my opinion, do not follow the intent of the 2009 Act approved by Congress. I am at a loss about any action except that I will contact my Senator and Congressman. I will report their unilateral redefinition of causal collecting as originally approved by Congress but also their actions inhibiting children and young adults from becoming interested in STEM careers (although the USFS does not believe this statement; however, they are not out here in the trenches). My final question is why does the USFS want to punish groups of concerned individuals (rock and mineral clubs) who try very hard to help educate children and adults of all ages about the interesting aspects of science?

The new collecting rules may be found in:

https://www.federalregister.gov/articles/2015/04/17/2015-08483/paleontological-resources-preservation

PICK&PACK
THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

Our Staff...
Lisa Kinder—Editor

We encourage everyone to submit articles, photos, illustrations or observations.

Share your experiences, your new finds, or simply your experience at our last field trip.

Handwrite it, type it, or email it. Format does not matter. All submissions are welcomed. The DEADLINE for items to be included in the next Pick & Pack, is the **21st of the month**

To submit an item:
For hardcopy photos or articles, mail to the address below or bring them to the General Meeting. All hardcopy photos remain the property of the submitter and will be returned. Electronic photos should be submitted at resolutions above 200 dpi in TIF, BMP, JPG, or PIC format. Articles are preferred in word. Editors will correct font.

E-Mail to:
csmseditor@hotmail.com

Mail to:
Pick & Pack Editor
PO Box 2
Colorado Springs, CO 80901

The PICK&PACK is published ten (10) times per year (no issues in January or August).

CSMS

T-Shirts, Badges, and Pins are available for sale.

If you celebrated a CSMS anniversary in 2013 or 2014, you are eligible for your one year pin award

Please see Storekeeper, Ann Proctor

Classifieds

FREE!!! 6th ANNUAL FREE!!!

WOODLAND PARK ROCK, GEM and JEWELRY SHOW

Thurs. - Sun. August 20th - 23rd, 2015

9:00am - 5:00pm

Located between Walmart and Burger King on HWY. 24, Woodland Park, CO

ROCK, GEM and JEWELRY AUCTION
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More Info?
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CSMS is an incorporated nonprofit organization with these goals:

To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils.

To encourage study, collection, and fashioning of minerals.

To accomplish the same through social meetings, lectures, programs, displays, shows, and field trips.

The Pick & Pack is published 10 times each year to assist and promote the above.

Joining the Colorado Springs Mineralogical Society (CSMS):

Meetings are held the **third (3rd) Thursday of each month**, except January & August, **7:00 p.m.** at the Colorado Springs Senior Center, 1514 North Hancock Ave., Colorado Springs, CO. **Visitors are always welcome**. CSMS also offers Satellite Group meetings that allow more focused attention in specific areas of our members' interests. Our current Satellite Groups consist of the following: Crystal Study Group, Faceting Group, Fossil Group, Jewelry Group, Lapidary Group, Micromounts Group, and Pebble Pups/Juniors. For details on Satellite Group meetings, check out the calendars on page 2 and the web site.

Yearly dues include 10 issues of the *PICK&PACK*, all field trips (additional fees may be required on some field trips, and members are responsible for all transportation to and from), participation in all Satellite Groups (some groups may request additional fees to help cover resource costs), free admission to the *Western Museum of Mining & Industry*, a year of learning and enjoyment, plus a lifetime of memories.

Individuals—$30, Family—$40, Juniors—$15, Corporate—$100, ******Application is on the web site.

If you are interested in joining CSMS or would like more information, we encourage you to attend our next General Meeting or visit our web site: www.csms.us.

CSMS is a Member of the following organizatons:

American Federation of Mineralogical Societies (AFMS) www.amfed.org

Rocky Mountain Federation of Mineralogical Societies (RMFMS) www.rmfms.org