

# The Lake George Gem and Mineral Club -

## Club News

December, 2015



### Program for the month: Saturday December 12

December: It's going to be a potluck brunch and grownup "Show & Tell"!

LGGMC will supply lemonade and coffee/tea, along with plates, napkins, forks, and knives. For the potluck, **bring snacks or light lunch food of some sort to share**. This might include chips & dip or cheese or cut vegetables, fruit, ham, turkey, chicken chunks, crackers etc. You could also include goodies like brownies or fudge, cookies, etc. Serving size for each should be about a dozen or fifteen people, you don't need to assume YOU alone are feeding everyone. No alcoholic beverages are allowed in the Community Center.

As to mineral specimens, we'll have a traditional LGGMC "Towel Show", which is essentially a grownup "show & tell". That means bring one or more minerals, fossils, or cut stones that you'd like to show to the rest of the members. It might be something like "Here's a rock I found in my driveway, what is it?" or it could be as complex as showing a collection of Moroccan specimens that you bought. Just plan on putting them on the table on top of a towel or other piece of cloth with any labeling you think might be appropriate; restricting size of display to no more than a normal towel keeps displays a reasonable size. This would be a good time to show what you found last summer! You can explain as much or as little as you feel comfortable doing about the specimens. Also, bring your "Unknown" specimens to try to get them identified. I hope the Pebble Pups/Junior Members and their families will feel welcome to come to this meeting also.

We'll have a short business meeting including **election of 2016 officers**, and we also would like your ideas on future winter meeting topics that would be of interest. After that, it's serious snack time while we are viewing and talking about the minerals or cut stones on display.

**Also**, during the meeting, we will continue a **silent auction** for some cool specimens donated by Club members. The way this works is that the specimens will be displayed at the back/side of the room with "bid sheets". Each item will have a minimum starting bid. You write your bid and initials in a blank space on the sheet and then watch to see if others outbid you. You can keep on bidding until the President says bidding is closed. So, bring some **CASH** and be prepared for the fun!

**Please Note:** If the weather is threatening, the officers of LGGMC will try to make a decision the evening before the scheduled meeting to call off the meeting if road conditions might be dangerous in the area. **Be sure to check your email BEFORE leaving your house for the meeting!**

### Coming Events

**"An overview of the geology of the central African copperbelt"** by Dr. Murray ... Dec. 10  
Hitzman, CSM Geology Museum, 7:30PM, Rm. 201, 1310 Maple St., Golden. Free admission

Lake George Gem and Mineral Club

December, 2015

<b><u>Flatirons Gem &amp; Mineral Show</u></b> , Boulder County Fairgrounds, Longmont.	...	<b>Dec. 11-13</b>
<b><u>"Basics of Mineral Identification"</u></b> , by <b>Bob Carnein</b> . See notice below.	....	<b>Jan. 23</b>
<b><u>"Basic Field Methods in Paleontology"</u></b> by <b>Steve Veatch</b> . See notice below.	...	<b>Jan. 30</b>

## Please Welcome New Members

Sharlene Gay Anderson (Lakewood)  
 Chad & Mary Chess (Florissant)  
 Jerry & Judy Cook (Jefferson)  
 Daniel Garcia (Woodland Park)  
 Bob Gaul (Longmont)  
 Matt Gropp (Colorado Springs)  
 James & Michelle Har (Colorado Springs)  
 John & Kathy Hermanson (Colorado Springs)  
 Connie Holcomb (Woodland Park)  
 Russell & Margaret Huard (Colorado Springs)  
 Greg Kistler (Dillon)  
 Bob Korzekwa  
 Tom & Amy Laabs (Bailey)  
 Claudia Lee (Como)  
 Norman & Sandra Mansfield (Divide)  
 Jim & Cathy McLaughlin (Tishomingo, OK)  
 David & Naomi Miles (Victor)  
 Katie O'Brien (Como)  
 Randy & Regina Reed (Council Grove, KS)  
 Richard Rust (Peyton)  
 Mark Stephen (Boulder)  
 Pat Thomas  
 Forrest & Midge Wheeler (Fairplay)

### **NOTE TO INCOMING/OUTGOING OFFICERS**

**To all incoming and outgoing officers, committee chairpersons, and coordinators:**

**There will be a short meeting of all of us at the December meeting after the potluck. We think we can simply gather at the front of the room for 15-30 minutes. This will be an opportunity for a Q&A among us. We can also exchange files, etc., as that might be appropriate.**

**We look forward to speaking with you all.**

**Thank you. -- The 2015 Officers**

✓ ✓ **Beth Simmons** sent this book recommendation: If you put one book on your stocking stuffer holiday list it should be Keith Heyer Meldahl's "**Rough-Hewn Land: A Geologic Journey from California to the Rocky Mountains**," U. California Press, 2011.

Your editor also recommends Harvey Gardiner's "**Mining Among the Clouds**", 2002, Colorado Historical Society. The latter will be one of several books (donated by **Loren Lowe**) in the December silent auction!

✓ ✓ **Bob Carnein's** mini-course on **basics of mineral identification** will be held on **Saturday, January 23, from 10AM to 2PM in the Florissant Library**. Registration is free; pre-registration is required, on a first-come basis. Please e-mail Bob at [ccarnein@gmail.com](mailto:ccarnein@gmail.com). Bob is the Lake George Gem & Mineral Club Newsletter Editor. He has a Ph.D. in geology from Ohio State and taught geology for 37 years in Pennsylvania before retiring to Florissant in 2007. He will use specimens from his extensive collection as examples of properties discussed in the mini-course. If you don't know how to read a mineral description or need a review, this course is for you...and it's **FREE!**

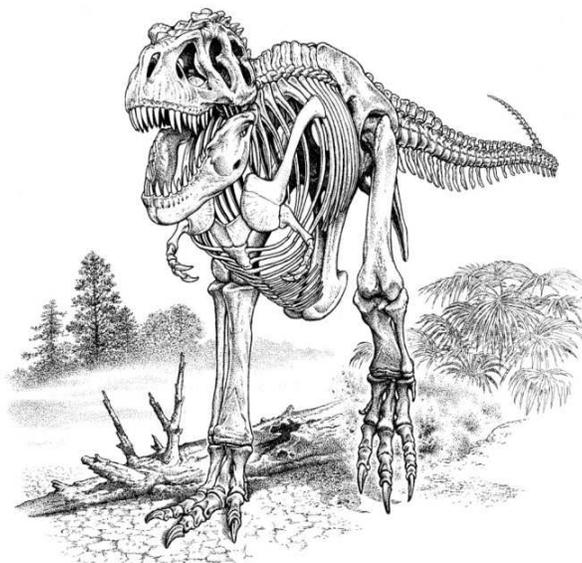
✓ ✓ Here's a notice from **Steve Veatch** about an upcoming course:

# Basic Field Methods in Paleontology

## COURSE DESCRIPTION

Join Steven Veatch and his team and collect fossils. It is important know that the collecting a fossil is to obtain a stable with the greatest amount of information along with it. Topics include: excavation of small vertebrate, and plant fossils; and curation of fossils; collection of data; coordinates; making digital photographs; writing. Join Steven Veatch and his team

the lost worlds where dinosaurs once ruled supreme. The course is sponsored by the Rocky Mountain Dinosaur Resource Center (RMDRC) and is perfect for ages 12 to adult. The course fee includes an information-rich resource CD, a certificate of completion, a fossil specimen, and a guided tour of the Rocky Mountain Dinosaur Resource Center. Each student will walk away with: 1) skills on how to curate specimens in a museum setting, 2) an understanding of the basics of fossil preparation for collections, and 3) knowledge of field collecting. Each student will also receive a digital database to record and track their personal fossil collection.



learn how to  
goal of  
specimen  
preserved  
dinosaur,  
identification  
using GPS  
and report  
and explore

## COURSE LOCATION

### Rocky Mountain Dinosaur Resource Center

201 South Fairview Street  
Woodland, Park, CO 80863

Register with the RMDRC by calling 719-686-1820 X104; ask for Deb.

Course fee: \$20 plus admission. Class must be prepaid at registration and includes a certificate of completion and handouts. Students need to bring a notebook, pen, and clipboard.

## COURSE DATE

January 30, 2016

✓ ✓ Thanks to **Loren Lowe** and **Bob Carnein** for donations for the November silent auction, which brought in more than \$70 for the Club treasury.

Lake George Gem and Mineral Club

**December, 2015**

✓ ✓ **Pebble Pups** meeting day is the **third Wednesday of each month**, and meetings are at the PPHS Museum in Florissant from **6:00 to 6:45 PM**

✓ ✓ **Char DeVries** and her committee have done a great job coming up with the following slate of nominees for 2016 offices. **Note that a few positions are still not filled; please consider volunteering!** The election will be at the December meeting, and additional nominations are welcome at that time.

President: **John Rakowski**

Vice President: **John Sprouse**

Secretary: **Norma Rhodes**

Treasurer: **Bob Korzekwa**

Newsletter Editor: **Bob Carnein**

Field-Trip Coordinator: **Todd Mattson**

Membership Coordinator: **Mary Rose Doucette and Dwain Dunigan**

Show Chairman: **Steve Woje**

Vendors/Dealers: **Becky Blair**

Volunteer Scheduling: **Don and Beverly Keith**

Marketing/PR: **Norma and Roger Rhodes**

Physical Assets: **open**

Pre-planning: **open**

Overnight Security: **open**

Badge Artist: **Bill Martin-Muth**

Club Claim Manager: **Dan Alfrey**

Webmaster: **Dan Alfrey**

Pebble Pups: **Steve Veatch, John Rakowski**

Librarian: **Norma Engelberg**

Silent Auctions: **open**

Hospitality (coffee/refreshments): **open**

✓ ✓ And here is the latest installment of "Bench Tips" by Brad Smith ([www.BradSmithJewelry.com](http://www.BradSmithJewelry.com)):

### **FOREDOM STAND**

A quick and easy way to suspend a flexshaft over your jewelry bench is to use some steel pipe components from your local hardware store. It attaches with a couple screws and only costs about \$10. I use 1/2 inch galvanized pipe and fittings. To build a stand that attaches to the top of your bench, all you'll need is a flange and a thirty-inch length of the pipe. If you prefer a stand that attaches to the side of your bench, you'll need a little longer pipe (3 feet), a flange, and a 90-degree "street elle".

Finally, make a hook that goes into the top of the pipe to hang the motor from. You can use heavy coat-hanger wire or 1/8 steel rod from the hardware store. (See pictures below)

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### **BROKEN DRILLS**

Have you ever broken a drill bit off in a hole? Sometimes, you can grab it with pliers, but other times the steel piece is below the surface in the hole. If this happens, a quick fix is to dissolve the steel in a solution of alum or fresh pickle. The solution will not affect your silver or gold piece.

Alum is typically available from a food store. It's used to preserve some foods. Use about a tablespoon per cup of warm water. Submerge your piece so that the partially drilled hole is facing up to let the bubbles float free and not block the hole.



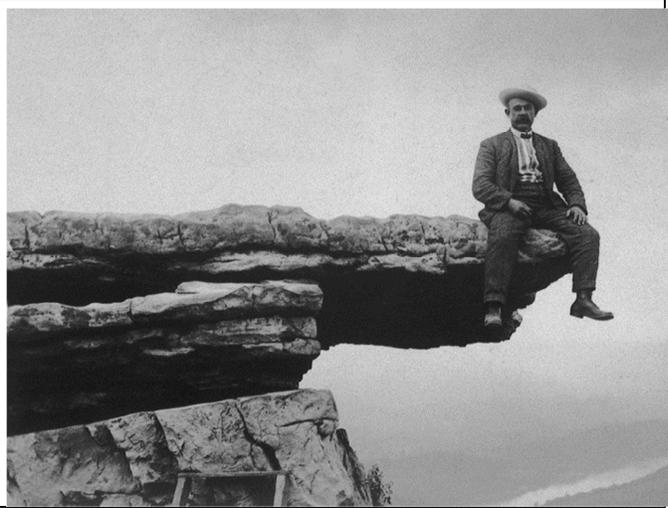
=====  
"Bench Tips for Jewelry Making" and "Broom Casting for Creative Jewelry" are available on Amazon

## Notes from the Editor

Bob Carnein, Editor

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719-687-2739



Here's an article about Cripple Creek's "sister mine" in Fiji. I visited Fiji very briefly on the way to Antarctica in 1965, and I can still remember the smell of flowers there in mid-November. At the time, I didn't know about Fiji's gold-mining industry. Enjoy!

### **Vatukoula: Cripple Creek's "Sister" Deposit in the South Pacific** by Bob Carnein

Few places could be farther apart, in space, climate, or culture, than Fiji and Teller County, Colorado. The Republic of Fiji is a collection of over 300 isolated volcanic islands in the South Pacific, between Hawaii and New Zealand (Figure 1). The two main islands, Viti Levu and Vanua Levu, cover most of the Republic's 7100 square miles (75,000, if you include the water!) and contain 87 percent of the total population of 860,000 ([Wikipedia.org/wiki/Fiji](http://Wikipedia.org/wiki/Fiji)). The islands are mountainous (with elevations up to 4341 feet—not very rugged, by Colorado standards), and the climate, as befits an island nation at a latitude of 15 to 20°S, is best described as tropical marine.

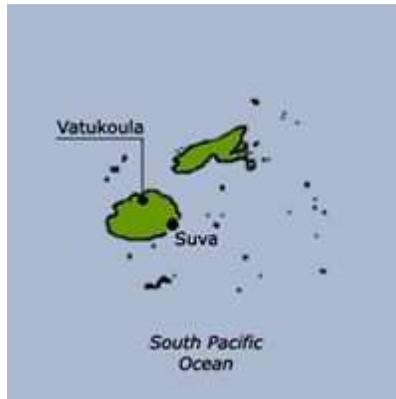


**Figure 1.** Location of Fiji. (exoticplaces.blogspot.com)

But Fiji and Teller County have one very important thing in common: both are home to world-class gold-telluride deposits. Although I have known about Fiji tellurides for years, last summer's Lake George Gem & Mineral Show piqued my interest and led to this article. In particular, some of you may remember Rich Fretterd's show booth, in which Rich and Jean Cowman had a small flat of unusually nice, relatively large Fiji telluride specimens for sale. Until then, most rocks I had seen from this deposit were either micromounts or thumbnails.

**History.** There is some dispute about who first settled Fiji. Archeological and other evidence suggests that either Micronesians or Polynesians first landed there about 1500BC. European settlers arrived in the 1820s, and this initiated 50 years of chaotic interactions between the native population and British, Australian, and American "visitors". In 1874, Fiji became a British colony. A cynic might note that this came close on the heels of several placer gold discoveries, starting with traces on the Navua River (in 1868) and followed by a larger find on the Nasivi River (1872), both on Viti Levu. Exploration of the latter deposit, at Vatukoula ("gold rock"), eventually led to a gold rush and introduction of a mining ordinance by the British colonial administration, in 1934.

1934 also saw the first involvement of Emperor Mines, Ltd., an Australian company that has gone through a number of hands in the 2000s and that still accounts for some 2000 employees in Fiji, making it Fiji's largest private-sector employer. Two other companies were minor players starting in 1935. Gold production was reported as 941 ounces in 1934 but had increased to 107,788 ounces by 1939. A geological survey of Viti Levu was initiated in that year, and the first geological map of Fiji was published in 1943, in the midst of WWII. By 1953, Vatukoula had a population of 4500 (second only to the capital Suva), and, by 1956, Emperor Mines Group had consolidated its control of the deposit.



**Figure 2.** Location of Vatukoula on Viti Levu. (fightback.org.nz)

A long history of poor working conditions, low wages, and serious environmental problems came to a head in 2006. Claiming high operational costs and low gold prices, Emperor shut down its Vatukoula operations. With it went the local schools, and workers were told to move their dilapidated company homes or they would be demolished. Despite years of government subsidies and “tax incentives”, Emperor Mines made no provisions for their workers’ welfare. In 2008, Emperor merged with Intrepid Mines, and the mine was sold to Westech (another Australian mining company) and then to Vatukoula Gold Mines, Plc, and reopened. Like much in the mining industry, this is a tangled tale; if you look up Emperor Gold Mines, Ltd., you will find that many information sources (Bloomberg.com, for example) still list Emperor as the owner of the deposit.

Whoever really owns the mine, conditions at Vatukoula have improved. A new ventilation shaft was installed, and a system for treating drinking water is finally in place. The company still needs to deal with air-pollution problems (from SO<sub>2</sub> generated by processing the ores) and the presence of at least 7 tailings dams in an area whose location on the Pacific “ring of fire” and in the tropical South Pacific result in earthquakes and torrential rainfall. The mine itself is hot and wet, with water temperatures underground of more than 120°F in places (Brien, 1967). Working conditions are still a subject of dispute, and gold production has decreased during the transition to new ownership. But high gold prices have brought relative stability. Historic production totals over 7 million ounces, and remaining gold resources are more than 5 million ounces.

**Geology.** Fiji lies on the edge of the Pacific “ring of fire”, at the boundary between the Pacific and Indo-Australian tectonic plates (Figure 3). Between 35 and 12 million years ago, the Pacific plate subducted under the Tonga ridge, resulting in eruption of the oldest volcanic rocks of Fiji. Subduction reversed in the mid-Miocene, and intense folding and faulting occurred in the Late Miocene (Smith, *et al.*, 2008). This led to volcanism and intrusive activity that spanned the Pliocene, followed by shearing and low temperature (epithermal) gold mineralization.

Several Tertiary volcanic centers in Fiji have gold, base-metal, and manganese deposits (Phillips, 1967). The Emperor mine exploits the most important of these, located on the margin of the Tavua caldera, near the north end of Viti Levu. Covering an area of about 30 square miles, the Tavua basin resulted from six phases of Pliocene volcanism (Denholm, 1967). The first two phases produced a basaltic stratovolcano cut by radial dikes. This was followed by gravitational collapse, forming a 3- by 4-mile caldera within the basin (similar in size to Cripple Creek’s diatreme) (see Figure 4, 5). The caldera filled with a mixture of lacustrine (lake) sediments and andesitic lavas and pyroclastic deposits. Volcanism and intrusive activity accompanied continued caldera collapse as the magma evolved from basic to more acidic and alkaline in composition. Residual fluids in the magma also evolved, becoming enriched in dissolved silica, carbonate, sulfur, gold, silver, and tellurium (Denholm, 1967).

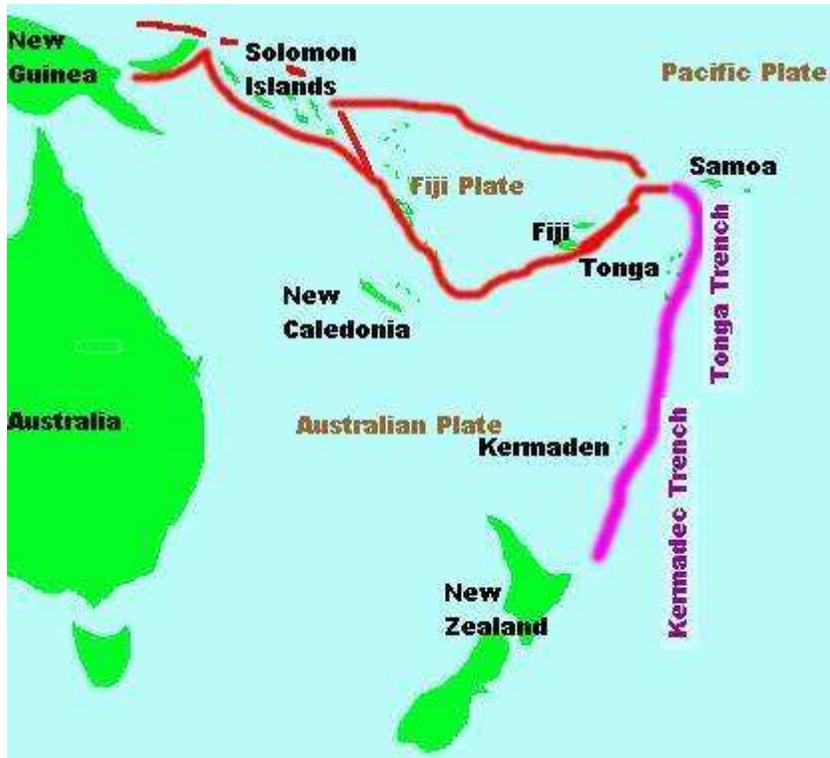


Figure 3. Plate-tectonic setting for Fiji. (chadfiji.blogspot.com)

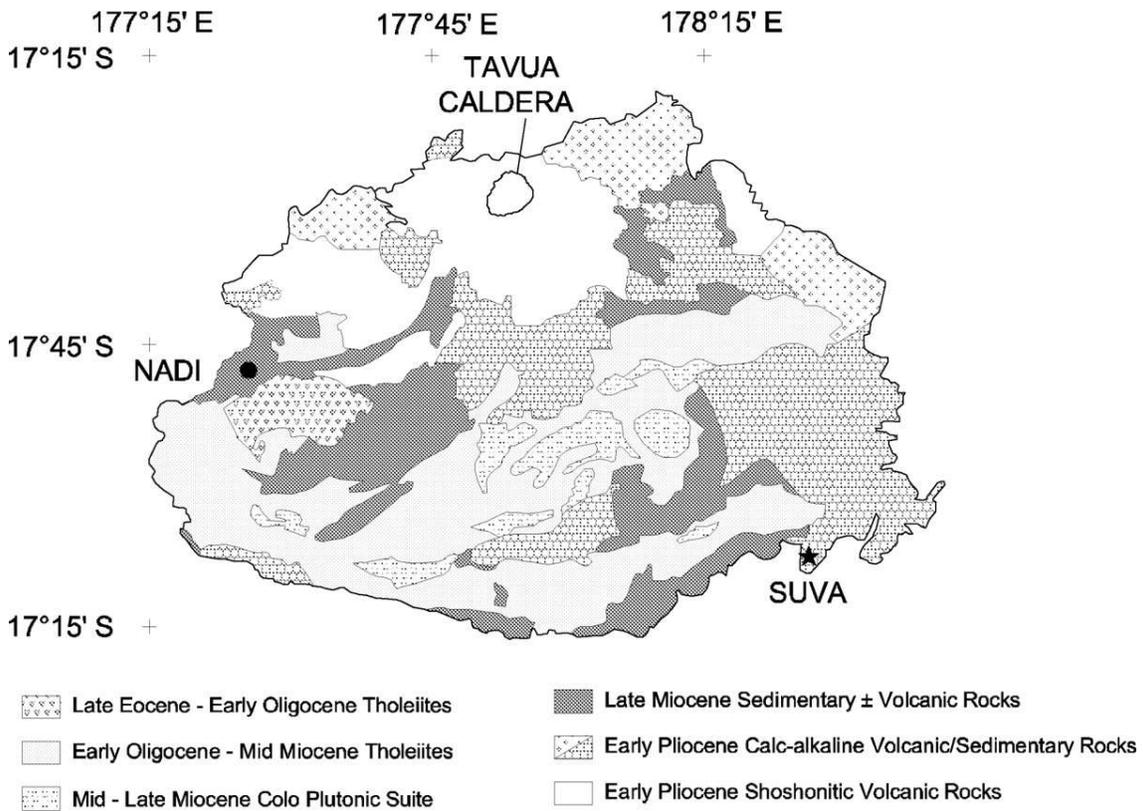
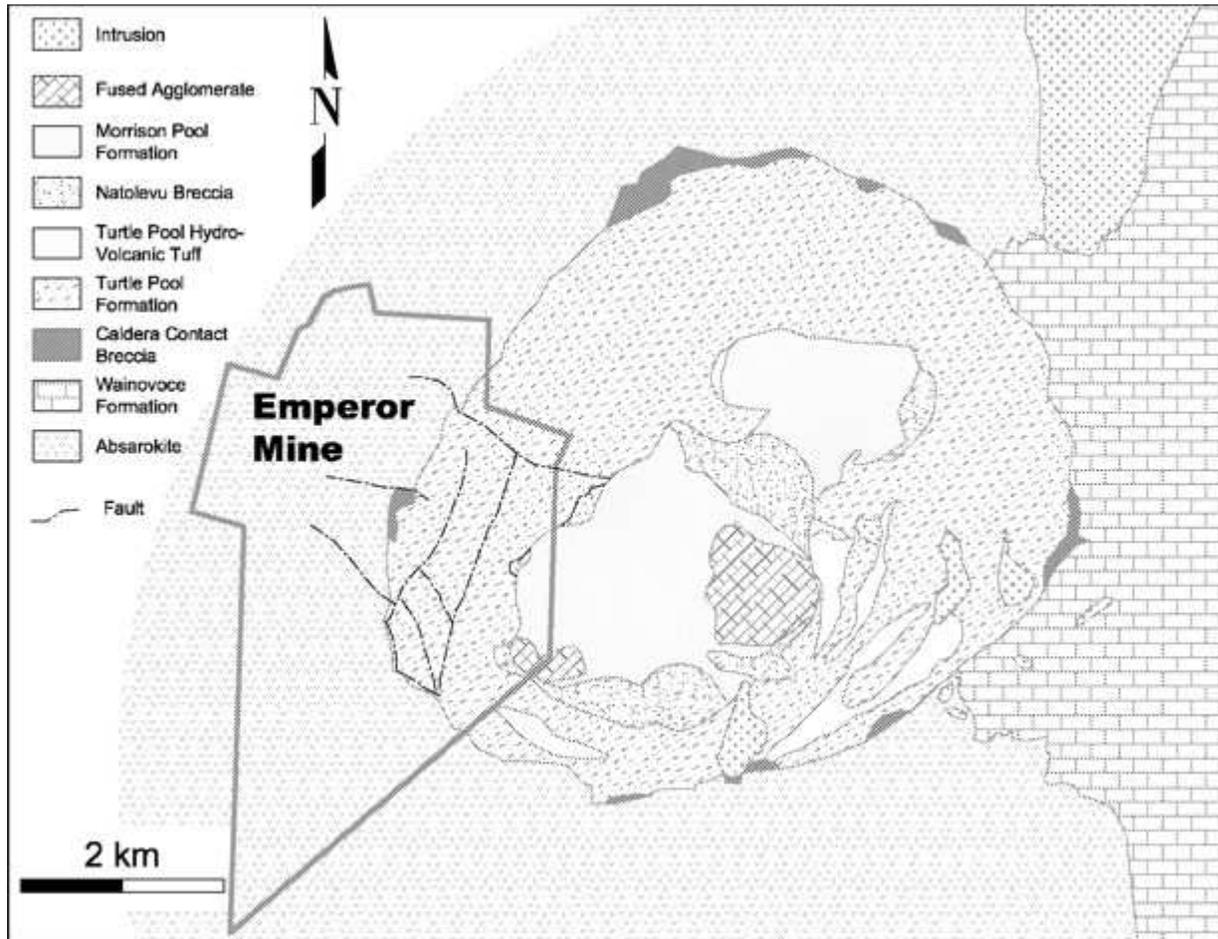


Figure 4. Geologic map of Viti Levu, showing location of Tavua caldera. (economicgeology.org)

After caldera formation was complete, a northwest-trending shear zone combined with flat-lying fractures to produce “shatter blocks” along the caldera margins. These fracture systems concentrated gold and silver mineralization. The Emperor mine occupies one of these “shatter blocks”.



**Figure 5.** Location of Emperor mine on edge of Tavua caldera. (econgeol.geoscienceworld.org)

The caldera border is marked by a zone of pyritic alteration and weak mineralization (Denholm, 1967). Quartz-filled fractures form vein systems in pre-caldera basalts along the margin. These show evidence of repeated opening (Ahmad, *et al.*, 1987). Sulfide, telluride, and gold deposition probably resulted from boiling and cooling of the hot-water solutions, combined with a loss of hydrogen sulfide and other dissolved gases. The fluids are thought to have come from a mixture of magmatic water and seawater derived from pre-basalt sediments. There may have been as many as 40 hydrothermal “growth cycles” involved in forming the veins (Pals and Spry, 2003). The gold itself is thought to have come from monzonite intrusives associated with the caldera (Ibbotson, 1967).

**Economics, Mining.** Total gold production at the Emperor mine is estimated at 7 million ounces. Reserves, as of 2006, were 18.5 million tons of ore averaging between 9 and 11 grams (about a third of an ounce) of gold per ton—about 5.7 million ounces of contained gold. Although it’s hard to make a direct comparison, this means that the Emperor mine may ultimately produce about half as much gold as Cripple Creek. However, Cripple Creek now exploits ores averaging less than 1 gram per ton of contained gold. Ores of such low grade probably occur at Vatukoula, but current reserve estimates don’t include them. Annual gold production at Vatukoula has recently averaged about 120,000 ounces (Smith, *et al.*, 2008), compared with 250,000 ounces at Cripple Creek.

**Minerals.** Forty-three valid minerals are currently listed for the Emperor mine on mindat.org. Much of the gold mineralization is “invisible” gold locked up in solid solution in pyrite and arsenopyrite. Between 10 and 50 percent occurs as precious-metal tellurides (Pals and Spry, 2003), the main telluride ore minerals being sylvanite and krennerite. Spectacular hopped sylvanite crystals to 2 cm., krennerite crystals to 3 cm., and tellurium crystals to 4 cm. (Smith, *et al.*, 2008) make specimens that compare favorably with the classic material from Cripple Creek.



**Figure 6.** Hopped sylvanite crystal, Emperor mine, Fiji. ([www.mineralman.com](http://www.mineralman.com))



**Figure 7.** Krennerite crystal, Emperor mine. ([www.flickr.com](http://www.flickr.com))

Lesser amounts of calaverite, petzite, hessite, coloradoite, melonite, and several other tellurides make comparisons with Cripple Creek inevitable. But, unlike Cripple Creek, Vatukoula contains no fluorite. Of the minerals listed at mindat.org, some are extremely rare and exotic, including the scandium phosphate kolbeckite and several vanadium minerals (e.g. karelianite, nolanite, schreyerite). From the writer's experience, specimens from Vatukoula are much scarcer than those from Cripple Creek, and they usually are “thumbnail” or micromount sized. Miniature or cabinet-sized specimens seldom appear in the marketplace. Hence my excitement when I saw Rich Fretterd's and Jean Cowman's offerings at the Lake George show.



**Figure 8.** Sylvanite and tellurium ([e-rocks.com](http://e-rocks.com))



**Figure 9.** Tellurium crystal ([www.irocks.com](http://www.irocks.com))

## References

- Ahmad, M., M. Solomon, and J.L. Walshe, 1987, Mineralogical and geochemical studies of the Emperor gold telluride deposit, Fiji: *Economic Geology*, vol. 82, no. 2, p. 345-370.
- Brien, J.W., 1967, Underground water at Vatukoula gold mine, Fiji, *in* K.A. Phillips, South-West Pacific Geological Survey Conference, Fiji, 1966: *New Zealand Journal of Geology and Geophysics*, vol. 10, no. 5, p. 1175-1203.
- Denholm, L.S., 1967, Geological exploration for gold in the Tavua basin, Viti Levu, Fiji, *in* K.A. Phillips, South-West Pacific Geological Survey Conference, Fiji, 1966: *New Zealand Journal of Geology and Geophysics*, vol. 10, no. 5, p. 1175-1203.
- Ibbitson, P., 1967, Monzonite plugs and composite intrusions near Vatukoula, Fiji, *in* K.A. Phillips, South-West Pacific Geological Survey Conference, Fiji, 1966: *New Zealand Journal of Geology and Geophysics*, vol. 10, no. 5, p. 1175-1203.
- Johnson, I.R., 1967, Geochemical exploration for gold in the Tavua basin, Fiji, *in* K.A. Phillips, South-West Pacific Geological Survey Conference, Fiji, 1966: *New Zealand Journal of Geology and Geophysics*, vol. 10, no. 5, p. 1175-1203.
- Pals, D.W., and P.G. Spry, 2003, Telluride mineralogy of low-sulfidation epithermal Emperor gold deposit, Vatukoula, Fiji: *Mineralogy and Petrology*, vol. 79, p. 285-307.
- Phillips, K.A., 1967, Fiji's mineral potential, *in* K.A. Phillips, South-West Pacific Geological Survey Conference, Fiji, 1966: *New Zealand Journal of Geology and Geophysics*, vol. 10, no. 5, p. 1175-1203.
- Smith, Bill, Carol Smith, and Wendell Wilson, 2008, The Emperor mine, Vatukoula, Viti Levu, Fiji: *The Mineralogical Record*, vol. 39, no. 4, p. 297-301.

**Lake George Gem & Mineral Club**  
Box 171, Lake George, Colorado 80827  
[www.LGGMClub.org](http://www.LGGMClub.org)

Date: \_\_\_\_\_/\_\_\_\_\_/20\_\_\_\_

Name(s) \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone (    ) \_\_\_\_\_ - \_\_\_\_\_ Email (please print) \_\_\_\_\_  
*(required to receive newsletter and field-trip info)*

Names/ages of family members (if family membership) \_\_\_\_\_

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Dues for Jan 1 through Dec. 31 each year are as follows (please check membership type):

\_\_\_\_ Individual (18 and over).....\$15.00

\_\_\_\_ Family (includes dependents under age 18).....\$25.00

Dues are due on or before March 31. Members with unpaid dues will be dropped from the roster on April 1. On/after **August 15**, dues will be reduced to half price for **NEW members only**.

I agree to abide by the Club constitution, by-laws, and rules regarding field trips and club claim visits.

Signed \_\_\_\_\_ Date: \_\_\_\_\_/\_\_\_\_\_/20\_\_\_\_

I am or have previously been a member of Lake George Gem & Mineral Club. Yes\_\_\_\_ No\_\_\_\_

**My interest areas** include (check all that apply): Minerals\_\_\_\_; Fossils\_\_\_\_; Lapidary\_\_\_\_;  
Micromounts\_\_\_\_; Colorado geology\_\_\_\_; Pebble Pups (ages 7-17)\_\_\_\_; Mining History\_\_\_\_;  
Crystallography\_\_\_\_; Other \_\_\_\_\_

**I am willing** to give a talk/presentation to (the Club) or (Pebble Pups) on \_\_\_\_\_  
\_\_\_\_\_ and/or lead a field trip to (list) \_\_\_\_\_

**I am willing** to participate/help in the following ways (can choose more than one): Club Officer\_\_\_\_;  
Newsletter Editor/Writer\_\_\_\_; Local Show/Show committee\_\_\_\_; Nominating Committee\_\_\_\_;  
Winter Programs Committee\_\_\_\_; Field Trips\_\_\_\_; Art (badges)\_\_\_\_; Membership Coordinator \_\_\_\_;  
Website Assistance\_\_\_\_; Pebble Pups\_\_\_\_; Other (be specific)\_\_\_\_\_

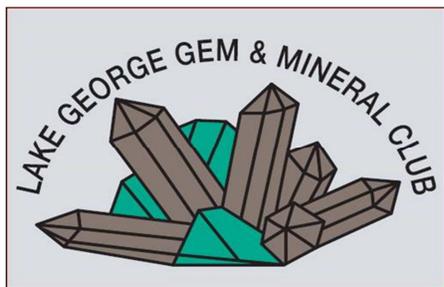
**Questions about the Club or Activities? Visit the website or contact a Club officer.**

Updated 05/01/2015

Lake George Gem and Mineral Club

**December, 2015**

Lake George Gem & Mineral Club  
PO Bo 171  
Lake George, CO 80827



**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 opportunities to learn about Earth science, 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 on 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 10:00AM. From April through October, we meet at 9:00AM, 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).

**Our Officers for 2015 are:**

**John Rakowski**, President  
PO Box 608  
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719-748-3861  
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**Char DeVries**, Vice President  
280 Homestead Rd.  
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**Suzanne Core**, Treasurer  
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