



THE NORTHERN VIRGINIA MINERAL CLUB INC



Crystals are the flowers of the Mineral Kingdom



THE MINERAL NEWSLETTER

Meeting: February 27 Time: 7:30-10 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22204

**Program: "Afghanistan:
Gold Rush in a War Zone"
Presented By Steve Peters, USGS
Reston, Virginia
Tuesday, 2/27/12**

There are a number of different types of gold deposits in Afghanistan. Many were discovered as much as 3,000 years ago and many contain ancient workings. Pluton-related gold deposits in Afghanistan mainly are polymetallic, gold-quartz veins and skarns that lie in northern Kandahar, northwestern Zabul and southwestern Ghazni Provinces and are associated with Oligocene and Cretaceous plutons. In addition, lode gold occurrences associated with metamorphic rocks are present in Badakhshan, Parwan and Baghlan Provinces. Gold placer deposits are present in northern Takhar Province. A number of geochemical mineral-halo anomalies also are present in north central Afghanistan and in the Katawaz Basin area in the east part of the country. The deposits related to regionally metamorphosed rocks in Afghanistan are low-sulfide, gold-quartz veins, mainly in the north in Badakhshan Province. (Continued on page 4)

Biography of Stephen G. Peters

Steve Peters is a research geologist with the US Geological Survey. His background is in mining, exploration geology and resource assessment. He is the Project Chief for the USGS Afghanistan Minerals Project and has also led projects in SE Asia and Madagascar. He received a PhD in Economic Geology from

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Also find information on our Club website:

<http://www.novamineralclub.org/>

"Re-Trip" to Flag Ponds Nature Center in Calvert County, MD

Contact: Pat Rehill 703-992-8345

When: 11am-2pm, Friday, February 24th

Cost: Three bucks

Weather forecast: low 32 degrees, high 52 degrees, low winds, sunny YIPPIE!

Tides: low tides, Perfect!

Clothing: Waders, high rubber boots...to keep your feet warm and dry. Dress in layers. The beach can be 10 degrees cooler than inland.

VENUE: This is a gorgeous beach with all kinds of fossils: sharks teeth, coral, shells, etc. bring plastic zip lock collection bags, a sifter. (Continued on page 7)

(Continued Biography of Stephen G. Peters)

James Cook University of North Queensland, Australia, an MSc in Engineering Science Management from the University of Alaska, and a BSc in Geology from Northern Arizona University. Steve has conducted field and laboratory research on Carlin-type gold deposits in Nevada and China for the USGS. Prior to joining the USGS he worked in private industry for 20 years in the exploration and production of mineral deposits with various mining companies in Australia, Western U.S., Alaska, and South Africa. Steve is a registered engineer (CEng) with the Institute of Mining and Metallurgy (London), a 32-year member of the Society of Economic Geology, and the American Institute of Mining and Exploration (AIME).

President's Message:

By Sue Marcus

As temperatures fluctuate outside, we can nurture our earth science interests in many ways. Join a *Fossil*



Field Trip with Patricia Rehill! Visit a museum. Catalogue your existing collection....and if you are doing some sorting, keep your Club in mind. We can use nice specimens for our door prizes and as Club specimens for our March auction. If you have specimens to give to kids at our fall Show, please contact Jim Kostka.

With shorter days, some of our Club members may appreciate a ride to our meetings. Consider calling offering a ride whenever you can. We're friends, so also offer an arm to lean on--or feel free to ask for one. We look forward to seeing you at our next meeting!

The Northern Virginia Mineral Club distributes this newsletter electronically, with paper copies mailed to members who request their copies in "hard copy." Postage costs have outpaced our memberships dues fees to the extent that mailing paper copies is now losing us money annually. We want to accommodate the needs of all our members and we want to keep everyone informed, though we don't want to lose money doing so. At our February meeting, we will discuss the possibility of establishing a 2-tiered dues system, with the costs to those receiving paper copies fully covering the postage cost. Please come to the meeting to share your thoughts, or contact Sue Marcus at r1haskins@verizon.net or 703-502-9844 if you can't join us.

NVMC Meeting Minutes January 23

By: Kathy Hrechka, Secretary

President Sue Marcus opened the business meeting at 8 p.m.. She personally thanked club members for setting up our December Holiday Party. Sheryl Sims and Pat Rehill were recognized for their fine job of decorating. Julia Hrechka was welcomed as our new newsletter editor. Ti Godfrey was congratulated for her new role as door prize director. Sue asked club members to donate minerals for door prizes.

Sue Marcus recognized Junior member, Jessica Simonoff for her in depth study of Skeletal Galena fakes. On behalf of the board members, Sue nominated Jessica for a \$100 Fred Schaefermeyer Scholarship. Secretary, Kathy Hrechka read from minutes of March 23, 2009 about allotting money from the fund. She agreed to write a brief report about the FS Fund, including the March 23, 2009 minutes. Club members discussed, and approved the \$100. award to Jessica.

Jim Kostka brought up the suggestion of using FS Funds for donation to the geology department for Dr. Kearns to apply to hotel bill at the Rochester Mineralogical Symposiums. Discussion occurred about directing the funds as scholarships directly for individual students.

Treasurers Report: Rick Reiber said " Dues are due." \$20. for a family membership. \$15. for individuals.

Sue Marcus announced that the Virginia Mine Safety Training is available if anyone is interested.

Field Trip Report: Calvert County, MD Flag Ponds Nature Park led by Pat Rehill. Ti Godfrey shared photos and stories of collecting fossil shark teeth on the beach. Jeff Cessna was congratulated for finding the most shark teeth. Pat Rehill found the most perfect large tooth. Mike Kaas collected bog iron from colonial times, and spread out his selection for give-aways. Kathy Hrechka shared her story of sitting

on driftwood raking Zen paths in the sand because she found no fossil shark's teeth. Pat is scheduling another trip in February. A possible trip to the Coast Guard Station on Solomon's Island will be June 19.

Announcements: Field Trip to visit the Geology Lab and Mineral Museum with Dr. Lance Kearns at James Madison University is scheduled for February 18.

Earth Science News: Earthquake reported in Hilo, Hawaii on the south side of the island. Mineral Virginia still reports tremors with 3. magnitude remaining from the Aug 23, 2011 earthquake. Meteorites from Mars are reported to be found in Morocco.

Visitors to our meeting include: Andrew Malcolm, a jewelry designer, and Judy Dixon, a friend of Sheryl Sims. Hutch Brown, of the US Forest Service joined us with his son, Alex.

Sheryl Sims demonstrated quartz that sparked by turning out the lights and striking two quartz against each other. The results were amazing; bright sparking. Jim Kostka invited members to take minerals and books from his give-aways. Andrew Malcolm passed around his rough rubies from Madagascar. One was to be a purple sapphire.

Meeting Adjourned. Break for Refreshments provided by Karen Lewis.

Previous Program

Silver Hill, Virginia. Presenter, Michael Kaas, geologist US Bureau of Mines.

Fred Schaefermeyer Scholarship Fund Update January 2012

Recorded by Kathy Hrechka, Secretary 1/26/12

When Peter Chin was President of our club, he introduced the thought of a scholarship program in the name of Fred Schaefermeyer. Fred became a member in 1982 and served most offices, as well as Chairs in the Eastern and American Federations. Fred valued teaching our youth about geology.

March 23, 2009 Minutes NVMC: Fred Schaefermeyer Fund: Tom Tucker presented this motion. "I move that as long as funds in the Schaefermeyer Scholarship Fund permit, the club make annual 'grants' in the amount of \$250. to a deserving student who is studying a specific mineral related topic at James Madison University. This student will be selected by Dr. Lance Kearns, Professor of Mineralogy at the university. The recipient will be invited to present the results of their study as a club program, or as an article in the newsletter."

The motion was seconded. Discussion included dropping the professor's name. The motion was carried.

NVMC Meeting Minutes September 26, 2011: F.S. Scholarship Fund Report: Kathy Hrechka reported that Dr. Kearns, JMU has selected a student, Michael Tracey, worthy of \$250. from the Fred Schaefermeyer Scholarship Fund. Tracey will operate the Helicon Focus Pro X64 to upgrade the micromineral photos on the JMU Geology Museum website. A motion was made and approved to send a check to Dr. Kearns. Kathy also asked for a second award of \$250 to be available for retroactive 2010, since no student was awarded 2010. The membership agreed to release monies only if Dr. Kearns found a worthy student in the future.

Kathy also made a motion to include our junior members access to scholarships in the amount of \$100. Discussion occurred, resulting in favor of juniors filling out an application form, for review of receiving any funds. Kathy will design an application and present it to the board members for approval.

Since its inception, two students have been awarded these scholarships. Dr. Kearns will be selecting a student this spring in order to keep the fund active. If you would like to make a donation, simply send a check to our club treasurer, Rick Reiber. One junior scholarship has been awarded to Jessica Simonoff for her study and presentations of Skeletal Galena Fakes.

Fred will celebrate his 93rd birthday on January 28 with his companion Muriel in Colorado. We continue to thank Fred for his investment in our club, and many happy years to come.

Continued: "Afghanistan: Gold Rush in a War Zone"

Pluton-related gold deposits are best represented by the Zarkashan porphyry-skarn deposit. The **Zarkashan copper-(gold) deposit** contains gold and copper mineralization in skarn and shattered zones (Table 1). The skarns are of the garnet vesuvian-diopside and diopside types with phlogopite, epidote, and wollastonite. The principal ore minerals - chalcopyrite, pyrite, sphalerite, chalcocite, bornite, and native gold – are finely and irregularly disseminated in the ore bodies. Several auriferous zones were delineated by Soviet workers, their width varying from 1 to 15 m and extension reaching 600 m. The zones enclose ore bodies of commercial value, which appear as lenses and nests 1.5 to 50 m in length and 0.5 to 3.8 m in thickness. The gold content varies between several tenths of a gram to 10 g per tonne. The zones were followed by tunneling to a depth of 80 m. The Category C₁ + C₂ reserves are 7.7 tonnes of gold. The tenor of gold in the Zarkashan mine area and at Zardak were confirmed in 2010 by the USGS and DoD.

The best representation of orogenic or metamorphic gold is in Badakhshan Province at the Vekadur deposit. The Vekadur deposit is one of the larger gold occurrences in Afghanistan and is hosted in Proterozoic mica schist and amphibolite that is intruded by diabase dikes and quartz keratophyre. The tabular, west-dipping orebody is 350 m long and 2 m wide and can be traced down dip for 110 m. Mineralization consists of ochreous, brecciated schist containing high gold concentrations along gently and steeply dipping fissures. The brecciated rocks grade 46.7 g/t silver and contain arsenopyrite, galena, chalcopyrite, and scheelite. Calculated resources are 958.3 kg gold averaging 4.1 g/t gold. The geometry of the deposit is amenable to open pit mining.

The NW Badakhshan-Ragh District also contains a number of unnamed occurrences such as the Kadar, Neshebdur, and Rishaw occurrences. The Kadar (Kalar) occurrence is hosted in Lower Triassic granodiorite in a 400-m-long, 20- to 70-m-wide shear zone that contains numerous quartz veinlets with disseminated pyrite and chalcopyrite and grades of 0.1 to 1.6 g/t gold. The Neshebdur occurrence is in weathered Proterozoic gneiss and contains three 120- to 360-m-long, 1.5- to 4.0-m-wide quartz veins containing galena, sphalerite, arsenopyrite, pyrite, and chalcopyrite and grades 0.2 to 1.1 g/t gold. The Rishaw occurrence is hosted in Lower Carboniferous marbled limestone and consists of a 400-m-long, 0.6- to 2.3-m-wide quartz vein that grades up to 5 g/t gold. These occurrences may have similar or larger potential to the Vekadur deposit. The NW Badakhshan-Ragh district also contains outcrops of Cenozoic conglomerate that may have potential for gold placer deposits.

<http://afghanistan.cr.usgs.gov/minerals>

Table 1. Prospects in the Zarkashan area with gold grades and dimensions from Abdullah

Target Area	Prospect	Size	Gold grades	Comments
Dynamite	Khinjaktu	200 m	1.8 g/t Au	Skarn,
Dynamite	Gulakhel	1.5 X 50 X 70 m	4.4 g/t au	skarns
Dynamite	Sufi Kademi	Skarn beds with conglomerate	7 g/t	Ancient workings
Dynamite	Dynamite	0.6 – 1.2 m	4 – 70 g/t	Drill holes
Dynamite	Chah -i Surkh	0.2 – 2.5 x 100 m	0.6 – 3.2 g/t Au	Shattered limonite zone
Bolo gold	Belaw	2 – 25 X 250 m	0.1 – 0.8 g/t Au	Skarn, limonite 1- 4 g/t Au
Bolo gold	Alaghzar	70 - 100 m X 500 m	0.01 – 1.6 g/t Au	Up to 35 g/t Au in serpentine
Bolo gold	Bala	0.5 – 12 X 140 m	0.8 -34 g/t Au	Fault zone with limonite
Bolo gold	Anguray	1 – 10 X 189 m	0.3 – 142 g/t	Skarn zone with Cu and Zn
Bolo gold	Utqul	0.5 X 300 m	11 g/t Au highest	Fault zone with limonite
Bolo gold	Bashargar	1 X 50 – 80 m	2.9 – 12.3 g/t Au	43 g/t Au in limonite

FOSSILIZED, BEAUTIFIED, PETRIFIED WOOD

By Sheryl E. Sims

(photo credits: http://en.wikipedia.org/wiki/Petrified_wood_)

Petrified wood is the fossilized remains of a plant that once grew on land. The name came from the Greek word, petro, which means wood turned into stone.¹ During what is called the permineralization process, minerals deposited in the plant or tree form internal casts. The mineral deposits, which are carried by water, take up space within the organism.² A silicification process occurs which converts the organism into stone and results in fossilization while the wood is buried under sediment which occurs naturally.³ Water, ice, wind, and oxygen all play a part in this process.

What is so amazing about petrified wood is that the original structure of the wood is preserved in great detail. The structural detail can be found even on a microscopic level. Bark, tree rings, tissues, etc. can be seen in petrified wood.

Petrified wood is as hard as stone. In fact, it has a Mohs hardness of 7. This is the same hardness that is found in quartz crystal. The colors of petrified wood vary and come from contaminants that found their way into the petrification process. Crystals found in petrified wood can turn red, yellow, and in rare cases, even green.

Recently, I had a rare opportunity to see a piece of green petrified wood that belonged to a private collector. It was amazing! I had no idea that green petrified wood even existed. The specimen came from a 14-foot piece of petrified log that is the only one in existence.

There are three types of trees from which petrified wood come: [Araucarioxylon arizonicum](#) trees, *Woodworthia arizonica* and *Schilderia adamanica* trees.⁴

The state fossil for Arizona, *Araucarioxylon arizonicum* is an extinct species of [conifer](#). It's well-known for its massive tree trunks which are sometimes used as building materials.

Woodworthia Arizona is one of the more rare species of petrified trees. It's now an extinct species and dates from the Triassic Period (200 - 250 million years ago).⁵ It possesses a unique and distinguishing characteristic. I was able to examine a piece and the bark was imbedded with buds or knott holes. They came from worms that bore through the bark leaving the knott holes behind. If were to slice through the bark, you would be able to see long, narrow channels from the worms. Finally, *Schilderia adamanica*, is recognized by its broad herring-bone rays.

¹ http://en.wikipedia.org/wiki/Petrified_wood

² www.wikipedia.com; www.nps.gov/imr/pefo

³ Ibid.

⁴ http://www.absoluteastronomy.com/topics/Araucarioxylon_arizonicum

⁵ http://en.wikipedia.org/wiki/Petrified_wood

Below is a list of elements that cause color changes due to contamination. Carbon turns the wood black; cobalt turns it green/blue as do chromium and copper. Iron oxide turns it red, yellow, and brown. Manganese turns it pink and orange, and manganese oxide turns it black and yellow.

When I collected my first piece of petrified wood as a child, I found it in Washington State. However, petrified wood can also be found in South America, Australia, Belgium, Canada – the Badlands, and other Canadian territories. It is found in China, the Czech Republic, Germany, Egypt, Greece, India, Indonesia, Libya, Namibia, and New Zealand. It is also found in the Ukraine, and the UK.

In the United States, petrified wood is found in Iowa, North Dakota, Washington State, Mississippi, Colorado, Utah, California, Wyoming and even New York! However, it is Arizona that is home to one of the largest petrified wood parks. The Petrified Forest National Park is located in northeastern Arizona. It is in both Navajo and Apache counties and is known for its fossils. Petrified trees have been dated from as far back as the late Triassic period of about 225 million years ago.⁶



⁶ Ibid.

While the Petrified Forest seems vast, today, there is a huge problem with tourist stealing pieces of petrified wood.⁷ There is a lot of energy being invested in preserving such natural wonders for future generation. With the high volume of visitors and tourists to the park each year, preventing them from walking out with a petrified souvenir is proving difficult.



(photo credits: http://en.wikipedia.org/wiki/Petrified_wood_)

⁷ http://en.wikipedia.org/wiki/Petrified_wood

Geology Events:

March 17-18: GLMSMC show, Montgomery County Fairgrounds Rockville, MD 10-6 Sat. & 10-5 Sun.

April 19-22: 39th Rochester Mineralogical Symposium. Raddison Hotel, Jefferson Rd. Rochester, NY

April 27-29: Atlantic Micromounters Conference will be held on at the MHA Conference Center in Elkridge, MD. Steve Weinberger crystal2@verizon.net

April 10-15 & Sept. 3-9: Wildacres Workshop

The EFMLS sponsors two workshops each year at the lovely Wildacres Retreat near Little Switzerland, North Carolina. Each session features a guest "speaker in residence" plus an opportunity to take one or two classes from an extensive list of offerings. Other activities during each session include a tail gate session, auction, "show and tell", fun night and sometimes a "free day" with opportunities for field trips. Dates for 2012 are April 10 - 15 and September 3 - 9. The fee for April is \$350 per person; for September, \$370. Both sessions include room and board. Additional charges may be assessed for material furnished by the instructors in the class(es) taken (i.e. metals, cabbing rough etc.). Speakers for the sessions are renowned photograph Jeff Scovil in April and Julian Gray, Curator at the Tellus Museum in Cartersville, GA in September. Each will give six illustrated talks during the workshop. Information and registration information may be obtained by visiting www.amfed.org/efmls and clicking on the Wildacres tab.



Continued "Re-Trip" to Flag Ponds Nature Center: 11am-2pm 2/24/12

Some areas have large trees that have drifted ashore. You will have to go out in the water around them to get to additional areas of the beach, or climb over/under them. You also can wade out in the shallow water quite a distance at about 3' deep. The water is very cold if you expose your hands to it.

Why are we collecting during the week? The park is only open on the weekends this time of year, which means the HUNGRY!!! fossil hunters, that you will encounter on the weekends, will run you down to get ahead of you. This way we will have an atmosphere for novices to learn about collecting. So this is your day!

Directions: Flag Ponds Nature Park on the Western Shore of the Chesapeake Bay near Solomon's Island.

As I mentioned at the meeting, It is about a 1-1/2 hour trip for me from Tyson's Corner. Another way to figure it is, it is 1/2 half hour from the Beltway/495 exit for Upper Marlboro Md., Route 4. There are police along Route 4, since everyone drives 70 mph. OOPS! So be careful. We can car pool or drive in a caravan. Once you are on Route 4, stay on it all the way to Flag Ponds. You will see a brown sign in the median strip near the entrance. You will travel through several towns with services for gas, food, etc. There is a good heated bath house at Flag Ponds.

ONCE INSIDE THE PARK-you will see a ranger house with a gate. The gate will be locked to keep the PUBLIC out. WE have special admission- so use the other side of the gate- where you exit- and OPEN & CLOSE that gate. Then drive to the parking lot at the first building. That is the education building, we will meet there.

Travel Time: 1/1/2 hours from Tysons Corners and parts thereabouts. Please be prompt.

Contact: Pat Rehill 703-992-8345



PLEASE VISIT OUR WEBSITE:
HTTP://www.novamineralclub.org

2012 Club Officers

President: Sue Marcus
rlhaskins@verizon.net
Vice President: Barry Remer
bsbremer@comcast.net
Secretary: Kathy Hrechka
kshrechka@msn.com
Treasurer: Rick Reiber
mathfun34@yahoo.com
Webmaster: Casper Voogt
webmaster@novamineralclub.org
Editor: Julia Hrechka
news.nvmc@gmail.com
Show Co-Chair: Tom Taaffe
rockcllctr@aol.com
Show Co-Chair: Jim Kostka
jkostka@juno.com
All American Club: Sheryl Sims
sesims4@cox.net
Greeter/Door Prizes: Ty Godfry
twhtknig@aol.com
Refreshments: Karen Lewis

The Northern Virginia Mineral Club

You can send your Newsletter articles to:

Julia Hrechka
7201 Ludwood Ct.
Alexandria, VA 22306

Or via email: news.nvmc@gmail.com

Visitors are Always Welcome at our Club Meetings.

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:

**Rick Reiber
Treasurer, NVMC
PO Box 9851
Alexandria, VA 22304**

OR

Bring your dues to the meeting

Purpose: To promote, educate and encourage interest in geology, mineralogy, lapidary arts and related sciences. The society is a member of Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) <http://www.amfed.org/efmls> and American Federation of Mineralogical Societies (AFMS) <http://www.amfed.org>.

Dues: Due by 1 January of each year; \$15.00 Individual, \$20.00 Family, and \$6.00 Junior (under 16, sponsored by an adult member).

Meetings are held at 7:45 p.m. on the fourth Monday of each month (except

May and December*) at Long Branch Nature Center, 625 Carlin Springs Road, Arlington, VA 22204. Phone (703) 228-6535. (No meeting in July & August.)

(* Changes announced in the newsletter.) Snow schedule - Arlington county schools.