

Tar Heel Tailings

A newsletter for Gem and Mineral enthusiasts in and around the Raleigh, North Carolina area.

Special Interest Articles:

- President's Report
- Apophyllite with Heulandite

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President's Report - Tar Heel Gem & Mineral Club, Inc.

It was great seeing you all after the holidays. I was very happy to see so many members as well as a lot of new faces at this meeting.

We got a lot accomplished and I would love to continue on a roll. We threw out a lot of ideas at this meeting and need to finalize as many of them as possible.

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Apophyllite with Heulandite by George Harris.

As winner of the door prize last month, I chose a specimen that was labelled as Apophyllite with Heulandite from India. Upon further research, the specimen is probably Fluorapophyllite on Pink Micro Heulandite from either the Poona or Nasik region of India, near Mumbai.

Apophyllite is often thought of as a Zeolite Group mineral, but Apophyllite is actually a layered Phyllosilicate; whereas, Zeolites, such as Heulandite, are network silicates belonging to the Tectosilicate Subclass.

Apophyllite does have a lot of similar properties to many of the zeolite minerals. Chief among them is its low specific gravity, environment of formation and ability to lose water when heated (although it does not have the ability to re-absorb the

water like zeolites). What confuses the issue is that frequently apophyllite and zeolites are associated together in low temperature/low pressure metamorphic environments.

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Tar Heel Gem & Mineral Club, Inc.

10609 Chelsea Drive
Raleigh NC 27603

Jack Fried – President
jackfried@aol.com
(919) 761-9390

Obsidian Harris – V-President
foxivy@nc.rr.com
(919) 674-0243

Michael Troutman – Secretary
michael.troutman@reichhold.com
(919) 676-3161

Corinne Hummel – Treasurer
mchummel@mindspring.com
(919) 779-6220

Tom Todaro – Field-Trip Coord.
& Committee Member
tomtinnc@gmail.com
(919) 639-7798

Emily Carabello – Committee Member
moonbeamwhippets@yahoo.com
(910)-581-2468

George Harris – Newsletter Editor
GeorgeFHarris@yahoo.com
(919) 674-0243

Bob Bendelow – Librarian
r.bendelow@earthlink.net
(919) 552-8175

We're on the Web!
See us at:
www.tarheelclub.org

Program & Refreshments

REFRESHMENT SCHEDULE:

Coordinator: Need Volunteer

February Mike Troutman

PROGRAM SCHEDULE:

February Committees

Remember, the club will reimburse you for up to \$40 (bring your receipts to the treasurer).

February Treasurer's Report

Nov. Ending /	
Dec. Beginning Balance	\$2141.93

Deposits (+)	
Members	\$40.00
Auction	280.00
Dealers	5110.00

Sub total	\$5430.00

Checks Written (-)	
PO Box 1 year	\$218.00
Trailer rent 1 year	720.00
Storage UNIT 1 YEAR	1212.00
Mis Supplies	48.51
Other items for club	243.54

Sub Total	\$2442.05

Dec. Ending /	
Jan. Beginning Balance	\$5129.88

February B-Day Members

- Greg Dillon
- Tom Gallian
- Kelley Gemma
- Kristina Haughton
- Jim Jin
- Victor Krynicki
- Barbara Lentz
- Mike Shore
- Larry Simms
- Kathy Williams



Membership applications may be mailed to:

Tar Heel Gem & Mineral Club, Inc.
Attention: Treasurer
10609 Chelsea Drive
Raleigh, NC 27603

Tar Heel Gem and Mineral Club, Inc. - January Meeting Minutes

Tuesday, January 15, 2012

Attendees = 35

At 7:40 Jack Fried called the meeting to order and welcomed newcomers/members to our meeting.

Jack then noted that Lee Fleming Jr, a long time member, had passed away and gave information on services.

Jack asked for the minutes and was referred to the printed copy in the News letter.

Jack next took the Treasurer's Report, and was assured that there was more money in the accounts than actually was noted since the yearly club dues for membership had started to come in and had not yet been posted to the books.

Old Business:

Jack then asked for any Old Business to which there was no reply.

New Business:

Jack then started in on the New Business... Membership, noting that 40 - 50% of the membership showed up to meetings and that the other 40-50%, were just interested in the field trips. He noted that even fewer of the club membership showing up to meetings were actually active in the club, serving on committees and helping with programs, activities and training. He stated that we need to greatly improve on the amount and quality of club member participation and had sent out an email to enquire as to what skills, knowledge, and interests members would be willing to share. He went on to say that he would personally look at the returned questionnaires and develop some ideas based on the responses he received.

Jack next went on to say that he was interested in updating the club website and needed to find contacts from our people who were or knew web masters/web page designers. Karen Santala stated that she knew people that may be able to help but would need a budget for them to work with. Emily Carabello, Board Member at Large, also stated that she had contacted some people who were interested in designing and updating our club web page and that she would bring more details to the next board meeting.

Jack next turned the floor over to Cyndy Hummel who brought up the subjects of club meeting refreshments for the membership and increasing the reimbursement for refreshments from \$40.00 to \$75.00. After a brief group discussion, the motion to increase reimbursement for refreshments from \$40.00 to \$75.00 was brought to the floor and put to a verbal vote by Jack to the membership present. The "Ayes" carried the vote and the motion passed.

Next, the discussion turned to whether the club should form a new "Refreshment Committee". After a brief group discussion, it was decided that a new committee would be formed and that Mike Troutman volunteered to head the committee. Emily Carabello also kindly volunteered to help on this committee. Mike will be providing refreshment for the club in February. Volunteers for March and the rest of the year are urgently needed.

Jack next turned to the subject of transporting the club Trailer to the THG&MC, Inc. Gem Show at the State Fairgrounds. It was noted that we would need either an F250 or 350 Ford since the trailer was heavy.

Chris Kidd volunteered to do the towing for our club. In return, Chris would receive space at the show to display some of his mining equipment and as well as get an area to set up where kids could

pan for gold in a sluice. Chris also noted that he had property in Franklin that he would open to club members interested in searching for aboriginal artifacts. Chris also noted that he had several properties that he would also open to club members interested in metal detecting.

Next, Jack turned our attention to the possibility of creating a Public Relations (PR) Committee. This would be a new committee charged with increasing the THG&MC, Inc.'s visibility and advertising our presence in the community. They would contact TV and Radio Stations. Arrange for display space at different shows like: Gun Show, Car Show, Boat Show, Farm Show, Other Gem and Mineral Shows. It was suggested that the PR Committee could work in alliance or be part of the Membership Committee since the function of both are to increase the membership in the club. No action was taken at this time and no member volunteered to lead the proposed committee.

Jack then asked where the club library could be found. After the administrator for the craft center was located, and the right set of keys procured, Jack was shown the club collection of rock and mineral books under lock and key in the in the room cabinets.

The next topic up for discussion was the need for a Program Committee and someone to lead it. Though all attending seemed to agree there was need, no action was taken at this time and no member volunteered to lead the proposed committee.

Marian Broadway was next given the floor where she asked for volunteers for the THG&MC, Inc. Gem and Mineral Show. She left a sign-up sheet at the secretary/treasurer's table.

Next Jack URGED ALL committees and committee members meet prior to the next club meeting and to be ready to indicate what they are working on and where they need help.

Door Prize:

The door prize was won by George Harris who chose a beautiful piece of Apophyllite with Heulandite (from India). As a reminder, if you happen to win the door prize, please compose a short article for publication in our news letter on what you won.

Meeting Close:

The final motion to close the club meeting was made by George Harris and Ken Troutman Jr. seconded. The meeting of the THG&MC was closed at ~8:30 PM.

Action Items:

1. Jack Fried to develop from the returned questionnaires ways for the club membership to become more active and contribute to club needs.
2. Board of THG&MC, Inc. to develop a budget for a web page designer/web master to update our club web page.
3. Karen Santala to contact people interested in web page design/web mastering and enquire about details needed.
4. Emily Carabello to contact people interested in web page design/web mastering and enquire about details needed.
5. Chris Kidd to provide towing for the club trailer to the State Fair grounds for the THG&MC, Inc. Gem Show in return for space. (Also need contact info.)
6. Jack Fried, further action on the proposed PR Committee?
7. Jack Fried, further action on the proposed Program Committee?

Respectfully Submitted

Michael Troutman, Secretary, Tar Heel Gem and Mineral Club, Inc.

President's Report

Continued from page 1

Our Bylaw committee has been reestablished. The search for a Web Master has started and we befriended a farmer with a truck.

Our March meeting will bring a few more motions and votes that I hope will continue to better our club. I also hope we will have a few more members volunteer their services.

Our field trips look very promising in the future and hope to see more of you attend them. If there is any place you might like to visit let us know at the next meeting or drop Tom Todaro a note.

Our show is rapidly approaching and if there is anyone who would like to donate some small stones for the grab bags, please feel free to bring them to the next meeting.

We will be forming committees this coming month and would like all of you to consider which one(s) you would like to join. They are as follows: Membership, Program, By-Laws, ITT or

Internet, Geode, Education- Newsletter Blog, Show Volunteer Group, and PR or Promotions Committees.

We will also be starting a new section in our newsletter all about our members. It would be nice to hear from you about how you got interested in mineral and rock collecting and or describing a special event you had.

Some of you were nice enough to return your questionnaires and I hope the rest of you will too, next month. You can all fill them out and e-mail them back to me. I noticed that a lot of you are interested in learning more and or exchanging information. Why not think of a way that we may do this at one of our meetings.

I have so much more to say and so little space. So I will silence myself to the next meeting where I hope to see even more of you.

Jack Fried,
President, Tar Heel Gem and Mineral Club, Inc.

Liquidation of 50 year collection

- Highland Park 8" grinder and buff
- Raytech 6" wheels with 3" expandable drums
- Lortone 6" diamond wheels
- Lortone 10" slab saw

- 18" slab saw
 - 3 burn out ovens
 - NC/US minerals, slabs, and rough
- John Heinz; (919) 851-0483; jpheinz@earthlink.net

Lapidary Equipment For Sale

- 10" Raytech Slab & Trim Saw
- Raytech-Shaw Faceter
- Raytech 5 wheel + flat polishing disc Cabbing Machine.

All the items are in working order but have not been used in many years and would need a good cleaning and lubricating before use.

Anyone interested may contact Hal McKinney via email at rainc@bellsouth.net



Apophyllite with Heulandite

Continued from page 1

Apophyllite, whose name roughly means "to leaf apart" in Greek, is a mineral classic. It was given its name because crystals tend to peel or flake apart when they are heated due to the loss of water molecules.

Unfortunately, *apophyllite is not a mineral!* Not officially, at least. Apophyllite is a general term for three *official* minerals that are similar in their chemistry and physical properties. Below is a comparison of the three official apophyllite minerals.

The Official Apophyllites

Mineral:	Formula:	Symmetry:	Color Range:	Type Locality:	Fluorescence:
Fluor-apophyllite	$(K, Na)Ca_4Si_8O_{20}(F, OH) \cdot 8H_2O$	Tetragonal; 4/m 2/m 2/m	White, colorless, green, yellow or violet	Nasik / Poona, India	Some specimens fluoresce pale green or yellow
Hydroxy-apophyllite	$KCa_4Si_8O_{20}(OH, F) \cdot 8H_2O$	Tetragonal; 4/m 2/m 2/m	White or colorless	Ore Knob Mine, Jefferson, North Carolina	Non-fluorescent
Natro-apophyllite	$NaCa_4Si_8O_{20}F \cdot 8H_2O$	Orthorhombic; 2/m 2/m 2/m (pseudo-tetragonal)	Brown, brownish yellow, yellow or colorless	Sampo Mine, Takahashi, Okayama, Honshu, Japan	Non-fluorescent

Fluorapophyllite is by far the most abundant and colorful of the three and is usually what is referred to when a specimen is just labeled apophyllite. **Hydroxyapophyllite** is also relatively common, but specimens typically lack any color and are limited to pseudo-cubic crystal habits. The **natroapophyllite** is quite rare and is found at only a few localities. Its typical brown color can help distinguish it from its close cousins. Natroapophyllite, by virtue of its more significant chemical and symmetrical difference, is truly a distinct mineral. Fluorapophyllite and hydroxyapophyllite however are a different story. The two are different minerals only because of the difference in the percentage of fluorine to hydroxyl ions. They represent the end members of a series that could be called the apophyllite series. The name apophyllite persists however and its usage is widespread, especially when distinguishing the true identity of specimens is difficult. Most mineral guide books list apophyllite as a single mineral and the rest of this discussion will deal with apophyllite in general.

What makes apophyllite so popular among collectors is its fantastic crystals with their gem-like vitreous to pearly luster. The favorite crystal habit is the rectangular prism capped by a steep four sided pyramid (*tetragonal dipyrmaid*). A doubly terminated crystal is exceptionally special. The faces of the pyramids are rotated 45 degrees with respect to the prism faces and so plunge down into the prism edges. This produces a diamond-shaped pyramidal face instead of a typical triangular pyramid face such as on quartz. The shape is an extraordinary example of tetragonal crystal form. Although normally colorless or white, colored examples of

apophyllite are always treasured. By far its most impressive color is the pastel green color that augments specimens from Poona, India.

The other common crystal habit is a pseudo-cubic crystal that occurs when there is no pyramid and the prism is ended by a flat termination (*a pinacoid*). The pinacoid is a crystal form that is perpendicular to the length of the crystal and so can abruptly terminate the prism. It is often seen as simply truncating the pyramids by cutting off the points of the crystal. When the prism is short and blocky and there are no pyramidal faces, then the pinacoid face can make the crystal appear cube shaped. However the prism faces are commonly striated and all in one direction while the pinacoid is smooth, giving its true symmetry away. Conversely, if the pyramid faces are the only dominant form then the crystal can fool someone in to thinking it is octahedral!

Apophyllite specimens are found in ancient lava and basalt flows. The crystals grow in the now solid cavities, called amygdules, vesicles, or (commonly) geodes, formed by air bubbles when the rock was molten. Apophyllite is also found in the voids in the contact metamorphic zone limestones that surround intrusive rocks.

Characteristics:

- **Chemistry:** $(K, Na)Ca_4Si_8O_{20}(F, OH) \cdot 8H_2O$, Hydrated Potassium Calcium Sodium Silicate Fluoride Hydroxide.
- **Class:** Silicates
- **Subclass:** Phyllosilicates
- **Group:** Apophyllite

- **Color:** Clear, white, green, yellow, pink, violet or rarely brown.
- **Luster:** Vitreous to pearly on cleavage surfaces.
- **Transparency:** Crystals are transparent to translucent.
- **Crystal System:** Tetragonal; 4/m 2/m 2/m; [natroapophyllite](#): orthorhombic, 2/m 2/m 2/m.
- **Crystal Habits:** Four sided prisms (with a square cross-section) truncated with either a steep four sided pyramid or a pinacoid termination or both. If the pyramids are missing, the crystals can look cubic. Rarely are the prisms missing, but if they are, crystals could appear octahedral because of the four sided pyramids. The faces of the pyramids do not lineup with the prism faces but with their edges, therefore the pyramid faces have four edges and appear diamond shaped instead of triangular like the pyramid faces of [quartz](#). Rare tabular [hydroxyapophyllite](#) crystals are also known.
- **Cleavage:** Perfect in one direction (basal).
- **Fracture:** Uneven.
- **Hardness:** 4.5 - 5.
- **Specific Gravity:** 2.3 - 2.4 (lighter than most translucent minerals).
- **Streak:** White.
- **Other Characteristics:** Prism faces are striated lengthwise, some specimens are fluorescent and crystals will flake when heated.
- **Best Field Indicators:** Crystal habit, striations, associations, environment of formation, cleavage and luster on cleavage surfaces.

Heulandite is one of the most common and one of the most well-known members of the [Zeolite Group](#). It can have a nice pearly luster and lovely colored hues. It forms wonderfully complex and quite unique crystals and is often associated with other rare and beautiful minerals. Rarely are the larger crystals transparent, but they always have a certain depth of translucency. Heulandite forms large crystals in the petrified bubbles (called vesicles) of volcanic rocks that have had a slight amount of metamorphism. Heulandite occurs in other environments but does not generally form large well shaped crystals in those situations. Heulandite gets its name in honor of [John Henry Heuland](#), a British mineral collector and dealer.

Heulandite's structure is sheet-like. Although still a true tectosilicate where every oxygen is connected to either a silicon or an aluminum ion (at a ratio of $[Al + Si]/O = 1/2$) and the structure is a framework, there still is a sheet-like structural organization. The sheets are connected to each other by a few bonds that are relatively widely separated from each other. The sheets contain open rings of alternating eight and ten sides. These rings stack together from sheet to sheet to form channels throughout the crystal structure. The size of these channels controls the size of the molecules or ions that

can pass through them and therefore a zeolite like heulandite can act as a chemical sieve, allowing some ions to pass through while blocking others. A zeolite can be thought of in terms of a house, where the structure of the house (the doors, windows, walls and roof) is the zeolite while the furniture and people are the water, ammonia and other molecules and ions that can pass in and out of the structure. In the case of heulandite, the sheet-like structure could be analogous to the floors of a high-rise office building with only a few braces between the floors. Heulandite's sheet-like structure produces the prominent pinacoid faces, the perfect cleavage and the unique luster on those faces.

Characteristics:

- **Chemistry:** $(Ca, Na)_2 \cdot 3Al_3(Al, Si)_2Si_{13}O_{36} \cdot 12H_2O$, Hydrated Calcium Sodium Aluminum Silicate
- **Class:** [Silicates](#)
- **Subclass:** [Tectosilicates](#)
- **Group:** [Zeolites](#)
- **Zeolite Family:** Heulandite
- **Uses:** Chemical filters and as mineral specimens.
- **Color:** Colorless, white, gray, green, pink, yellow, red, brown and black.
- **Luster:** Vitreous to pearly on the most prominent pinacoid face and on cleavage surfaces.
- **Transparency:** Crystals are transparent but most commonly translucent.
- **Crystal System:** Monoclinic; 2/m
- **Crystal Habits:** Blocky crystals described as diamond-shaped, trapezoidal and old fashioned coffin shape with the two faces of a pinacoid usually prominent. Crystals are often modified by secondary faces with pairs of triangular faces very common. Prismatic and acicular forms are also known and are difficult to identify as heulandite. In aggregate specimens this face can be oriented upward producing a crust of curved pearly faces or it can be oriented to the side where the tops of the crystals jut out like the roof tops of a suburban community. Crystals can be simple or complexly modified by a variety of prism and pinacoid faces.
- **Cleavage:** Perfect in one direction parallel to the prominent pinacoid face.
- **Fracture:** Uneven.
- **Hardness:** 3.5 - 4, maybe softer on cleavage surfaces.
- **Specific Gravity:** 2.1 - 2.3 (very light due to the open channels and high water content).
- **Streak:** White.
- **Best Field Indicators:** Crystal habit, density, cleavage, luster and associations.

References: Apophyllite: <http://www.galleries.com/Apophyllite>

Heulandite: <http://www.galleries.com/Heulandite>

UPCOMING SHOWS

February 23, 2013: Lakeland, FL - Imperial Bone Valley Gem, Mineral and Fossil Society; 175 Lake Hollingsworth Dr., Lakeland, FL 33801; Hours: 9-4. Admission: Adults \$3.00, Children and Teachers Free. Show Chair: Kim Price 863-412-9156; email contact IBVGMFS@gmail.com; Website: www.bonevalley.net

March 1-3, 2013: St. Petersburg, FL - 43rd Annual Gem, Jewelry & Mineral Show and Sale. THE SUNCOAST GEM & MINERAL SOCIETY. The Minnreg Building, 6340 126th Ave. N., Largo, FL 33773. Hours: Fri: 10-6; Sat: 10-6; Sun: 10-5. Show contact: Bill Schmidt, Show Chair, (727) 822-8279; Email contact: SGAMSGemshow@gmail.com; <http://www.sgams.com/Shows/show.html>;

March 8-10, 2013: Augusta, GA - 25th Annual Aiken-Augusta Gem, Mineral & Fossil Show. Aiken Gem, mineral and Fossil Society and Augusta Gem and Mineral Society. Julian Smith

Casino, 2200 Broad St., Augusta, GA. Hours: Fri & Sat 10-7; Sun 10-4. Admission: \$3/Adults; Children under 16 Free with an Adult. Co-Chair: Richard McNutt and Chris Glass

March 15-17, 2013: Rome, GA - The 34th Annual Valley and Ridge Gem and Mineral Show, Sponsored by the Rome Georgia Mineral Society, The Forum, Rome GA. Hours: Fri & Sat 10-6, Sun 11-5. FREE ADMISSION!. For more information: Jose Santamaria, Show Chair (678) 488.9560; rogams.show@gmail.com;

April 5-7, 2013: Raleigh, NC - 37th Annual Capital Area Gem & Mineral Show. Tar Heel Gem and Mineral Club, Inc. Kerr Scott Building, NC State Fairgrounds, Raleigh, NC. Hours: Fri 3-8; Sat 10-6; Sun 10-5. Admission: Free and Free Parking. Contact: Cyndy Hummel; 919-779-6220; mchummel@mindspring.com; www.tarheelclub.org;



Vugsites The following are some links to Web-Sites that may interest some of our members:

<http://www.amfed.org> / <http://www.amfed.org/sfms> These are the official sites for the organizing body that the Tar Heel Gem & Mineral Club is founded under. I would strongly urge all members to check them out on a regular basis.

http://www.amfed.org/sfms/lodestar_newsletter.html The SFMS Lodestar Newsletter

<http://www.carolinageologicalsociety.org/CGS/Home.htm> This site provides numerous downloadable field-trip guide books, maps, and charts of the Carolinas. It will prove to keep any avid rock hound busy for years. Great Site!

http://www.ncminerals.com/ncmineralswebsite_files/page0011.htm And while we are on the subject, try this link. Its titled: Links of Interest to Rock hounds in NC. It will take you to a list of links for North Carolina gems and minerals.

<http://www.rocksforkids.com/> Just like the name says, a nice place to steer the younger members.

Information & photographs of over 6300 specimens from the Glenn & Martha Vargas Gem & Mineral Collection.

<http://www.rockhoundlounge.com> Scott Laborde, a club member maintains his own web site that might be of interest to people collecting in and around Wake County.

http://www.msnbc.msn.com/id/29726500/ns/technology_and_science-science This site highlights a half dozen of the most recent significant fossil finds.

<http://appmodo.com/13971/mole-quest-for-the-terracore-gem-app-review-for-the-iphone-and-ipod-touch/> If you have an iphone or an ipod touch, this rock-hounding may be the game for you.

http://diamonddanpublications.net/index_files/page0009.html Diamond Dan's Mini Miner's Monthly

I would like to encourage all members of the THG&MC that maintain their own presence on the internet to send me a link to their site to be published in future Vugsites so that other club members may learn and enjoy the craft, the art, the interests that many of us have in common.

