July, 2017
Volume 45, Issue 07

Tar Heel Tailings

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

Special Interest Articles:

Individual Highlights:

Prez Sez

By Melissa Whitfield

Dear Members,

I hope that you are enjoying your summer and all the hunting and prospecting that tends to happen this time of year.

I wanted to remind everyone that in August we will have a Kid's Night along with our Ice Cream Social and auction. I am looking for volunteers to help set this up and a few people who can maybe run tables for us:

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Majorite – Mineral offers clues to Earth's mantle dynamics

Source: Carnegie Institution for Science

Recovered minerals that originated in the deep mantle can give scientists a rare glimpse into the dynamic processes occurring deep inside of Earth and into the history of the planet's mantle layer. A team led by Yingwei Fei, a Carnegie experimental petrologist, and Cheng Xu, a field geologist from Peking University, has discovered that a rare sample of the mineral majorite originated at least 235 miles below Earth's surface. Their findings are published by Science Advances.

Majorite is a type of garnet formed only at depths greater than 100 miles. Fascinatingly, the majorite sample Fei's team found in Northern China was encased inside a regular garnet -- like mineralogical nesting dolls. It was brought to surface as an eclogite xenolith in the North China Craton, one of the oldest cratonic blocks in the world. What's more, the majorite was rich in ferric iron, an oxidized form of iron, which is highly unusual for the mineral.

All of these uncommon factors prompted the team to investigate the majorite's origins.

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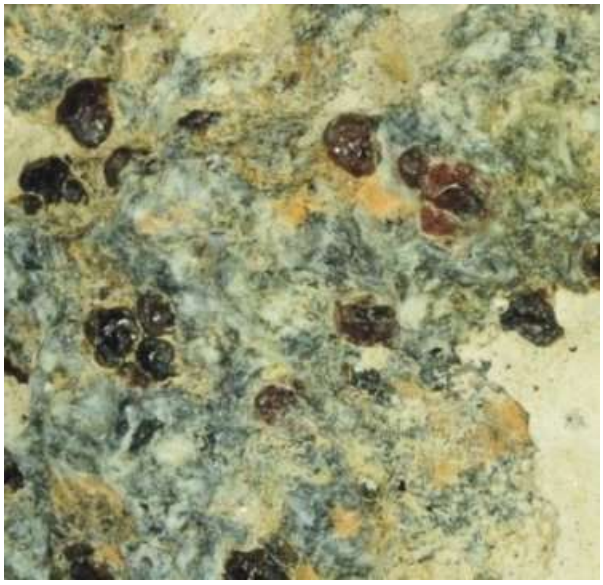

Tar Heel Gem & Mineral Club, Inc.

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

Membership applications may be mailed to:

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

Program & Refreshments

REFRESHMENT SCHEDULE:
Coordinator: Loretta Turcotte
(919) 771-6366

July	TBD

PROGRAM SCHEDULE:

July	Cathy Young – Mid-Atlantic Nature and Fossil Adventures: Fossil Collecting in the Mid-Atlantic
August	Ice Cream Social
September	Fletcher McDonald-Micro-mineral Collecting and Preparation
October	Nominations, Grab Bags
November	Elections

Remember, the club will reimburse you for up to $85 (bring your receipts to the treasurer).

July Treasurer's Report

May Ending / Jun. Beginning Balance	$12,279.69
Deposits (+)	
N/A	
Sub total	$0.00
Checks Written (-)	
Geode Booth (2017)*	$47.59
Meeting Food	85.00
Field Trip Gifts	97.50
Sub Total	$230.09
Jun. Ending / Jul. Beginning Balance	$12,049.60

*Show Items

July
B-Day Members

Mike Allsbrook
Lindsey Bradshear
Becky Davenport
John Guerriero
Michele Rosar
Penny Rosser
Eric Schaufler
Barbara Todaro
Susan Violon
Jeff Wilson

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

Tuesday, June 20, 2017

Attendees = 35

Opening of Club Meeting:

The club enjoyed refreshments provided by Loretta and Melissa

Meeting was called to order by the new President Melissa Whitfield at 7:51pm

Melissa asked who was joining us for the first time and had the guests introduce themselves and talk about what drew them to the club and gems and minerals in general.

Program:

Dr. Rachel Smith, Curator of Meteorites at the NC Museum of Natural History

Melissa introduced Dr. Smith who began a media presentation on Meteorites and the search for life in space. Dr. Smith had a meteorite to pass around and fascinating facts to present. The members asked many questions of her during and after the lecture and had really great and informative discussion.

Old Business:

After the presentation, everyone thanked Dr. Smith. A 5 minute break was taken and then the President recognized those members having a birthday in June.

New Business:

The President thanked everyone for nominating her to fulfill these duties throughout the year and talked with the club about the vital need for volunteers to help the officers and chair. She asked people to contact her if they wanted to volunteer. She also asked folks to spread the word about the club and invite friends to join our meetings.

Shirley Greene announced that some spots had opened up for the Castle Haynes field trip. There was some discussion about a proposed field trip to a private site in July and the next organized trip in August. Look for more announcements on these.

The President made the suggestion and it was approved by club members that the August club meeting along with the ice cream social and auction be a 'Kid's Night'. She would like people to bring their children and grandchildren and is open to suggestions about what activities to do that night. These will be early and later the auction will start. It was suggested some rock/gift bags be given out. Some tables where kids could bring their items for identification. Maybe even a show and tell from them. Please spread the word and send her suggestions.

It was noted that for the auction in August the club has cut gemstones to auction off.

Door Prize:

The President won! And gave the winning pick to her nephew and new member of the club, Joshua Strickland who proceeded to pick out a ocean Jasper sphere.

Close of Meeting:

Melissa called the meeting to a close at 9:45pm.

Respectfully Submitted
Melissa Whitfield,
President, Tar Heel Gem and Mineral Club, Inc.

Prez Sez

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activities, rock identification, etc. As well as if you have a kid or grandkid who might want to do a show and tell and tell us about a piece in his collection. Please contact me if you do or if you have ideas for how we can make this a fun night and engage our young folks in all that has to do with gems and minerals.

Thank you,
Melissa Whitfield
President
Tar Heel Gem and Mineral Club, Inc.

Majorite

Continued from Page 1

They used several different kinds of analytical techniques to determine the chemistry and structural characteristics of this majorite formed deep inside Earth. In order to determine the exact depth of its origin, Carnegie's postdoc Renbiao Tao conducted high-pressure experiments that mimicked the formation conditions of natural majorite. The team pinpointed its origin to a depth of nearly 250 miles (400 kilometers), at the bottom of the soft part of the upper mantle, called the asthenosphere, which drives plate tectonics.

It is extremely unusual that a high-pressure majorite could survive transportation from such a depth. Adding to the strange circumstances is the fact that it was later encased by a garnet that formed at a much shallower depth of about 125 miles (200 kilometers). The nesting-doll sample's existence required two separate geological events to explain, and these events created a time capsule that the researchers could use to better understand Earth's deep history.

"This two-stage formation process offers us important clues about the mantle's evolutionary stage at the time when the majorite was first formed," Fei explained.

The sample's location and depth of origin indicate that it is a relic from the end of an era of supercontinent assembly that took place about 1.8 billion years ago. Called Columbia, the supercontinent's formation built mountain ranges that persist today.

"More research is needed to understand how the majorite became so oxidized, or rich in ferric iron, and what this information can tell us about mantle chemistry. We are going back to the site this summer to dig deeper trenches and hope to find fresh rocks that contain more clues to the deep mantle," Fei added.

Story Source:
Materials provided by Carnegie Institution for Science.

Journal Reference:
Cheng Xu, Jindřich Kynický, Renbiao Tao, Xi Liu, Lifei Zhang, Miroslav Pohanka, Wenlei Song, Yingwei Fei. **Recovery of an oxidized majorite inclusion from Earth's deep asthenosphere**. *Science Advances*, 2017; 3 (4): e1601589 DOI: 10.1126/sciadv.1601589

Carnegie Institution for Science. "'Nesting doll' minerals offer clues to Earth's mantle dynamics: Rare sample discovered of the mineral majorite that originated at least 235 miles below Earth's surface." ScienceDaily. ScienceDaily, 7 April 2017. <www.sciencedaily.com/releases/2017/04/170407143313.htm>.

June Door Prize – Ocean Jasper Sphere

by Joshua Strickland

I didn't win the door prize, but I was really surprised and excited when my aunt Melissa, who as the winner, gave it to me. When I went up to pick, I saw some cool prizes, such as a skull. However, I decided to go with the Ocean Jasper sphere, because when I looked at it, it looked like a tiny universe inside it. While I know there wasn't one, it still was cool to look at, which is why I chose it. Since then, I have learned that Ocean Jasper comes from Madagascar, and it comes in four variants. It is also a healing stone, and it can help with patience.

Field Trip Information

By Shirley Green

Hiddenite, NC

When:

Saturday, July 22, 2017 from 8:30 AM until ?.

EVERYONE NEEDS TO ARRIVE BY 8:30 AM.

Where:

We will meet at 8:30AM at Dollar General, 86 Old Mountain Rd, Hiddenite, NC

Hotels in nearby Statesville

Tools:

- Plenty of fluids to drink
- Snacks
- Long Flat tip screwdriver
- Pick & hammer for rock area
- Shovels & screen for dirt area
- Gloves
- Sunscreen
- Sun protection, including shade cloth
- Bug spray - not sure if we will need or not
- Backpack or bucket or both
- Newspaper to wrap your specimens in
- Hand truck

Collecting:

Hopefully we will find the following Crystals here:

- Quartz
- Smoky quartz
- Rutilated quartz
- Rutile
- Mica

There is a creek nearby to screen for the small rutile crystals

Fee:

Adult - $20, Child (17 and under) $10

Who:

Please RSVP to Shirley Green. richard60green@yahoo.com (919) 848-1085

Minerals and Microminerals of Graves Mountain

By John Whatley

First appearing in Hound's Howl (June 2017)

Graves Mountain is a monadnock of three hills rising above the surrounding countryside near Lincolnton, Georgia. Before mining, it stood 895.7 feet (273 m) above sea level. World class mineral specimens have been unearthed from this location since the 1850s, and a range of minerals and microminerals are found here.

The west mountain has been deeply mined and is the current main mine pit. A former mountain saddle that existed between the West and East mountains once yielded excellent rutile crystals, and today rutiles are still found in the main pit.

The most prevalent rocks at Grave's Mountain are pyrite–seracite(mica)–kyanite–quartz rocks (commonly called kyanite-quartzite).

These rocks began as volcanic deposits of ash on the bottom of the sea that built up during the Cambrian Period (560 mya) into an island of bedded tuff. Hot volcanic solutions flowing from the thenosphere leached Ca, Mg, Na, and to a lesser extent K in the area surrounding the island, forming lenses of cherty aluminum-clay–rich rock.

During the Alleghenian Orogeny, when Africa collided with North America (330–270 mya) to form Pangaea, this area underwent severe metamorphism. This heat and pressure transformed the rock into the quartz-kyanite seen today. Hydrothermal solutions intruded through cracks in the rocks, bringing in quartz and remobilizing existing minerals that eventually formed the kyanite, rutile crystals, lazulite, and quartz crystals (Hartley, 1976; Santamaria 2003).

Lazulite, bipyramidal form

Graves Mountain is one of an irregularly spaced series of monadnocks that extends northeast into central North Carolina and Virginia. The mountain lies in a thick sequence of metamorphosed volcanic and sedimentary rocks known as the Little River series

(Lower Paleozoic) and is located in the southwestern end of the Carolina Slate Belt.

Kyanite garnered interest in the 1940s and was commercially mined from 1965 to 1984 under two different corporations. Because kyanite is a refractory, it can tolerate high temperatures, thermal shock, and chemical attack. During firing at 1100–1480°C, kyanite (6 Al2SiO5) converts to mullite (2 Al6Si2O13 + 2SiO2), which is a high-temperature refractory compound.

Today, the caretaker of the Graves Mountain is Clarence Norman, Jr., who opens the mine to the public twice a year for a modest donation and a signed release form. Gem and Mineral Clubs are able to access the site with his permission and a fee.

The following photographs are only a few of the over 30 different minerals and microminerals found in and around Graves Mountain.

October Rock Swap & Dig

8 am to 6 pm, Friday, October 6, 2017

8 am to 6 pm, Saturday, October 7, 2017

8 am to 6 pm, Sunday, October 8, 2017

Limenite

Pyrophyllite

Kyanite Crystals coated with hematite

Iridescent hematite

For More Information on Graves Mountain, please visit:
http://gamineral.org/ft/commercial/ftgravesmain.html

UPCOMING SHOWS

April 6 - 8, 2018: Raleigh, NC – 42nd Annual Capital Area Gem & Mineral Show. Tar Heel Gem and Mineral Club, Inc. Kerr Scott Building, NC State Fairgourds, Raleigh, NC. The show is sponsored by the Tar Heel Gem & Mineral Club and includes 29 dealers. The Hospitality area sells grab bags with mineral specimens. Buy a rock at the Geode booth and be the first to see what is inside. The on-going Silent Auction has new items every hour. Dealers provide minerals, fossils, finished jewelry, gemstones, findings and beads for sale.. 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;

July 30 - August 6: Spruce Pine NC - 33rd Annual Grassy Creek Mineral and Gem Show. Sponsored by the Parkway Fire and Rescue to raise funds for new equipment. 60 worldwide vendors with gems, minerals, fossils, jewelry, lapidary equipment and much more. Address is 136 Majestic View, Spruce Pine NC 28777. This is at the new fire station on top of the hill above the old fire station and show field. Dates are July 30th to August 6th, 2017. Hours are from 10 to 6 with some vendors open earlier or later. Admission and parking are free. Contact Donna Collis at 828-765-5519 or collisdonna@yahoo.com. Website is http://wwwgrassycreekgemshow.org. Applications are available on the website.

Vugsites

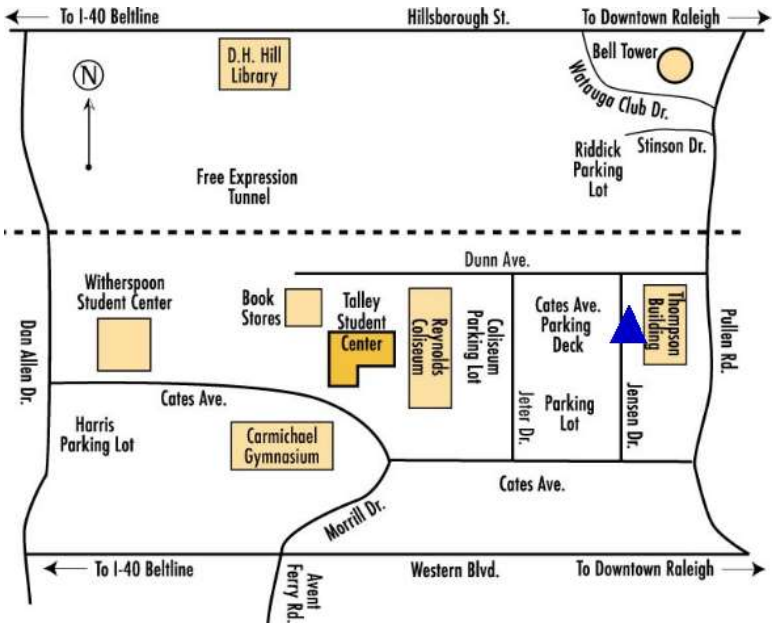
The following are some links to Web-Sites that may interest some of our members:

http://www.tarheelclub.org / https://www.facebook.com/tarheelgemandmineralclub/ These are the official sites for the Tar Heel Gem & Mineral Club. I would strongly urge all members to check them out on a regular basis.
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.htmlThis 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.

Park in the Cates Ave. Parking Deck off Jensen Dr. Enter Thompson Building directly across from the parking lot.

Our Next Meeting is
July 18, 2017 @ 7:30PM
Thompson Building / NCSU Campus.



About Our Organization...

The Tar Heel Gem and Mineral Club, Inc. was formed in 1974 as a nonprofit educational organization for people who enjoy the lapidary arts, earth sciences, and related subjects. The main objectives of the club are to investigate, preserve, and share knowledge of rocks, minerals, and precious stones, and to promote interest in mineralogy, paleontology, earth sciences, and lapidary techniques, among club members and among the general public. The club pursues these goals through publications, meetings, lectures, field trips, exhibits, demonstrations, and other activities.

Come and be a part of the Fun!

TAR HEEL GEM & MINERAL CLUB
10609 Chelsea Drive
Raleigh, NC 27603