

Tips *and* Trips



The Georgia Mineral Society

Atlanta, Georgia

Volume XXXIV/Four

April 2005

President's Message



Some opportunities for GMS come up so quickly we don't have time to get them into *Tips & Trips*. For example, GMS was asked to again work the Fossil Event at the Georgia State Science Olympiad competition (well, after Anita Westlake had prodded the events coordinator). Unfortunately, we received the invitation in late February (after the March newsletter had gone out), and the competition itself will be held on April 2. Thus, there was no chance of a prior announcement herein. Needless to say, the fossil competition will be capably run by Carolyn Daniels, assisted by Anita Westlake and several as-yet unknown assistants – a report on this will appear in the May issue.

Looking ahead, GMS will be participating in Earth Day activities at the Fernbank Science Museum on Saturday, April 16, from 10 AM to 2 PM. We are allotted a single 6-foot table, so we won't be able to show much. I will be there, as well as Joan White and Bill Waggener. Feel free to come out and help us. What better day to talk to the public about our hobby than Earth Day?

Finally, don't forget that next month is our May show. Please be thinking about what you can do to help – Jay Gorday has an article in this issue outlining areas where help is needed. However, even those areas that seem to be covered can always use an extra hand or two. The amount of work required is actually little, compared with what the committee chairs have done to this point. Help Jay make this show a success.

Doug Daniels, President

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GMS Executive Board Meeting April 10, 2005 2:00 PM

Home of Dylan & Mary Porter, 196 High Creek Drive, Roswell, 770-998-1018.

A quarterly Executive Board meeting will be held as noted above. All members are invited to attend.

April General Meeting
7:30 pm, Monday, April 4, 2005
Chamblee Library
4114 Clairmont Road
770-936-1380

NaCl Sodium Chloride:
The Importance of Salt in the History of Mankind
By Jim Haege

From preserving food and healing wounds, to providing the minerals chlorine and sodium for today's industry, salt has been an important mineral commodity since prehistory. Every cell of our bodies contains salt - an adult human body contains about 250 grams to maintain the normal volume of blood and to digest food. Join us for an exciting talk by fellow GMS member Jim Haege, on this very historically important mineral.

Show & Tell:

Anyone with a halite crystal, or non-toxic and stable crystal of the elements of salt, is welcome to show and tell your story.

March Show & Tell was a great success! Fort Drum field trip finds of a crab fossil and numerous clam shells with 1"+ calcite crystals!

Until next time: Remember to salt that black ice!

Dylan Porter,
VP/Programs



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Halite Crystal, NaCl
Searles Lake,
San Bernardino Co., CA
Cluster of many translucent, colorless halite crystals are cubic form with compound, multicrystal forms. No damage. Overall size of mineral specimen: 8X6X5 cm. Size of individual crystals: 1-2 cm.

Photo from website
<http://www.mindat.org/gallery.php?min=1804>



The Georgia Mineral Society, Inc.
A Non-Profit Educational Organization

Objective and Purpose
To Educate the Youth of the State
and the Members of this Society
In the Field of Earth Science



AFMS Education - All American Club 2003

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Facilities	Open to Volunteers	
Historian	Roxanne Lopez	770.436.0387
Hospitality	Margaret Ronan	404.636.0720
Librarian	Dick Anderson	770.888.9331
Parliamentarian	Kim Cochran	770.979.8331
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The article submittal due date for the May 2005 newsletter is April 10, 2005.

GENERAL MEETINGS
 General meetings are held on the first Monday of each month. In the event that the first Monday is a holiday and/or the facilities are not available, the meeting will be held on the third Monday of the month. General meetings are currently held at the Chamblee Branch of the DeKalb County Library System. Any deviations from the above schedule will be announced in Tips and Trips.

The Georgia Mineral Society on the Internet:
<http://www.gaminerall.org>
 E-mail Early Notification Program: A field trip and club news update service. To join, members are requested to send in their current e-mail address to:
gms@gaminerall.org

May Show Committee Chairs

Show Chair	Jay Gorday	770.986.0822
Dealer Chair	Martha Brown	770.448.0876
Exhibits	Open	
Demonstrations	Anita Westlake	404.761.7849
Hospitality	Anita Westlake	404.761.7849
Treasurer	Teresa Curl	770.751.7313
Advertising	Perry & Teresa Curl	706.764.2291
Dealer Dinner	Joan White	770.478.5734
Database	Joan White	770.478.5734
Grab Bags	Kim Cochran	770.979.8331
Auction	Kim Cochran	770.979.8331
Set Up/Take Down	Open to Volunteers	

**March 2005 GMS General Meeting
Program Review**

Julian C. Gray, fellow GMS member and Mineral Section chair, gave a PowerPoint presentation titled Geo-hazards: Earthquakes, Volcanoes, and Tsunamis. He began with an overview of the world's plates and boundaries, and explained seismic activity, showing fault zones and a seismic gap.

Julian's first topic was tsunamis, which is a Japanese word that means "harbor wave". Causes include earthquakes, landslides, and rare meteorite impacts. The latest tsunami, in December 2004, was caused by an earthquake that reached 9.0 on the Richter scale. The sea floor was displaced 10 meters, and was followed by more than 70 aftershocks.

Volcanoes were the next topic of the presentation. Julian explained the two general types of volcanoes being shield volcanoes, which produce fast running, thin magma, and strato-volcanoes, which have a high gas and ash content, producing pyroclastic flows. He touched on types of detection: seismic data vs. gas sampling. Julian then showed pictures of Mt. St. Helen's before, during and after the eruption in 1980. He then shared vacation photos of his visits to Mt. St. Helen's, Mt. Hood, and Mt. Rainier, my favorite being titled "When your vacation becomes a media circus", due to seismic activity at Mt. St. Helen's.

Many thanks go to Julian for sharing his knowledge of these natural hazards of the earth.

**Mary Porter
GMS Member**



(photo courtesy of Jay Gorday)

Doug Daniels and Margaret Ronan award the door prizes.

We Do Make a Difference

Carolyn Daniels spoke to four seventh grade science classes (life science) at the new Tucker Middle School on February 15th. She spoke about ancient life and fossils, how fossils formed, where to look for fossils in Georgia and why, relative and absolute dating, etc. Here is a copy of the thank you note from the teacher:

Mrs. Daniels,
We thank you so much for spending the whole day with us. What a treat for the students and for me. I showed a video later and many of the kids said, "Oh! Mrs. Daniels told us that too!"

Thanks again, Janie (Ms. Hartman)

**March 2005 General Meeting
Mini-Minutes**



The March 2005 General Meeting of the Georgia Mineral Society was held on March 7th at the Chamblee Library and called to order at 7:40 PM by President Doug Daniels. Approximately forty-one people were present, including one new member.

Dylan Porter introduced the speaker of the evening, Julian C. Gray, who gave a presentation on geo-hazards. At 8:42 PM the business portion of the meeting commenced with reports from executive board members and committee chairpersons. Jay Gorday gave an update of the May show and announced that grab bags will be stuffed at Kim Cochran's house on April 26th. GMS member Carolyn Madden presented letters made by her 3rd grade class, thanking GMS for the December show, which they made one of their two field trips per year.

Door prizes were awarded at 9:02 PM and the meeting was adjourned at 9:15 PM.

**Respectfully Submitted,
Mary Porter, Secretary**



(photo courtesy of Jay Gorday)

Julian C. Gray has captivated the attention of Joan White and Marcella Wood at the March General Meeting with his presentation on geo-hazards.



May Show News

It's hard to believe that as you are reading this, we are five to six weeks away from our Mother's Day Gem and Mineral Show.

There are still plenty of opportunities to volunteer your time and talents. Let the committee chairs know you want to help and we will find a place and time to use your talents. I'm sure that there will be volunteer lists passed around for the Dealer Dinner and Hospitality Table at the April and May Meetings requesting help.

Don't forget about display cases, to me the displays are the highlight of the show. As an added incentive to putting in a display case, GMS gives a \$50 award to the best case and \$25 for the second best case. **SPECIAL NOTE TO JUNIORS:** In an effort to get more juniors active and putting in displays, I will give a \$25 award to the best Junior case (this is in addition to the two GMS awards). Let me know if you want to put in a display case.

Anita is looking for people to demonstrate your special facet or knowledge of our rock hounding hobby. If you don't volunteer, she may call you and twist your arm.

We need food for the Dealer Dinner. GMS provides the meat and plates and cups and we ask members to bring a salad, vegetable or desert. Please let Joan know what you can bring.

We also need someone to head the Set-up and Take down. We usually have plenty of helpers but need someone to coordinate all our efforts.

We have plenty of the flat fliers available to pass out to our friends and families and businesses. I will have them at the monthly meetings. If you need more fliers and/or are unable to get to the meeting, please let me know and I will make sure you get the fliers that you need.

We have set Tuesday, April 26, as the night to stuff the grab bags. If you never have helped stuff grab bags before, you do not know what you are missing. It's a lot of fun and Kim always makes sure that we are well fed so we have plenty of energy to stuff the 1000 bags! We will eat about 6:00 PM and start stuffing after supper. We still need cloth bags and material to put into the bags.

We still need auction materials. We will have one Auction at 2:00 PM on Saturday. Let Kim Cochran know if you have donations for the auction. The proceeds go directly to the club's Building Fund.

**Jay Gorday
May Show Chair**

Editor's Note

Thanks to all for submitting material for the *Tips and Trips*. Please send your articles, poems, and collecting tips for publication. The Gestalt theory holds for the newsletter - the whole is greater than the sum of the parts.

Thanks, Joan White, Editor

Important Dates:

- 4/26/05 Grab Bag Party at Kim's
- 5/4/05 Load Up Trailer at Kim's
- 5/5/05 Show Set Up starting at 10AM
- 5/5/05 Dealer Dinner at 6PM
- 5/6/05 Show 10AM – 6PM
- 5/7/05 Show 10AM – 6PM
- 5/8/05 Show Noon – 5PM
- 5/8/05 Show Take Down
- 5/9/05 Unload Trailer at Kim's

May Show Committee Chairs

Show Chair	Jay Gorday	770 986-0822
Dealer Chair	Martha Brown	770 448-0876
Exhibits	Jay Gorday	770 986-0822
Demonstrations	Anita Westlake	404 761-7849
Hospitality	Anita Westlake	404 761-7849
Treasurer	Teresa Curl	770 751-7313
Advertising	Perry and Teresa Curl	770 751-7313
Dealer Dinner	Joan White	770 478-5743
Database	Joan White	770 478-5743
Grab Bags	Kim Cochran	770 979-8331
Auction	Kim Cochran	770 979-8331
Set Up/Take Down	OPEN	

Thought for Food

Please give some thought for assisting with the dealer dinner this May. The donation of a dish, cash contribution, or time will be greatly appreciated. All of the dealers and volunteers at the show look forward to this meal. If you do not attend the general meetings and would like to help out, please email me at jowhite@bellsouth.net to let me know your contribution to assist me in the meal planning and begging for helpers. Let us make it the best yet! Thank you.

Joan White, Dealer Dinner Chair

Grab Bag Stuffing Party

**April 26th, 6:00 PM
2605 Van Court
Snellville, GA, 30078
770-979-8331**

We will eat before we get busy stuffing those bags. Please let me know if you plan to attend. We have some bags left over from last year. We need approximately six hundred new bags. We need people to sew bags. We also need goodies to fill the bags. I have ordered shark teeth and quartz crystals. I have ordered some material but what arrives by UPS does not touch the amount of material that it takes to fill all of these bags. Now is the perfect time to high grade your collections and donate the leftovers for the grab bags or, possibly, for the auction. Please, bring any items for donation to the meetings or call me and I will pick them up. We need everyone's help. Thank you.

Kim Cochran, Grab Bags

WHAT'S IN IT? HOW IS IT MADE?

Earl Verbeek from Sterling Hill Institute of GeoSciences

(Thanks to Anita Westlake, written permission from the author was granted to GMS to publish this article in Tips and Trips. This article is under copyright and is not to be reproduced without the author's consent.)

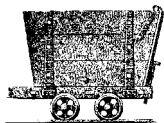
We are now in our third generation of people who are largely disconnected from the land around them. The original settlers who came to this country felled the trees, cleared the land, tilled the soil, and quarried rock. Settlements sprang up around deposits of iron, zinc, and copper, which provided employment and raw materials for the miners, blacksmiths, and workers in the rolling, stamping, and slitting mills that made products from these metals. Your ancestors five generations back likely made their own candles and clothes, used coal or wood for heat, and dug their own wells for water. These days, however, few of us are directly engaged in mining or manufacturing, let alone making our own clothes and shoveling coal into a furnace. Whenever we need something, we simply go out and buy it. When we want heat, we turn up the thermostat.

What we've gained in convenience we've lost in knowledge. Should you doubt this, ask any ten of your friends what raw materials are used to make glass, or a dinner plate, or a computer, and you will see what we mean.

No longer are we close to the Earth in anything but the literal sense. For this reason we ask nearly every visitor to the Sterling Hill Mining Museum the following question: Can you name any product you've used in the last two weeks, a product manufactured by man, that did not somehow involve mining in its production? The goal is not to glorify mining, but merely to explore how much mining affects our daily lives. Like it or not, the answer to that question is: nothing.

Below we list broad categories of products that we use in our daily lives, and explain how mining is necessary to bring those products to you. In later documents we will address the environmental consequences of mining and the steps we might take to reduce our demand for raw materials taken from the Earth.

Metal Products



With very few exceptions, wherever metal is part of a product we use, or was part of the machinery used to manufacture that product, the metal came from a mine. Our houses contain copper pipes and wire, iron nails and screws, aluminum window

frames, and tungsten in our light bulbs.

Our cars contain zinc (in carburetors, fuel pumps, and tires), iron (as steel, for the frame and body), copper (wires), lead (in the battery), mercury (the reflective part of the mirrors), chromium (as plating on door handles, hubcaps, mirrors, etc), and strontium (the flares in the trunk).

The light from many of our televisions and computer monitors comes from compounds of metals that some people have never heard of, but nevertheless use every day. Our streets are lit at night by sodium and mercury vapor lamps. We wear jewelry composed of gold, silver, platinum, copper, or brass (an alloy of copper and zinc). Some of us have gold-capped teeth and mercury-based fillings in our mouths, or even artificial knee and hip joints made of titanium. Metals are such a pervasive part of our daily lives that it is hard to imagine what life would be like without them--we would, after all, have to go back to the Stone

Age. Nevertheless, many people seem not to realize the connection between metals and mining.

Plastic Products

The raw material for nearly all plastics is either oil or coal. In an average home you're likely to find many products made from plastic: drinking glasses and coffee cups, dinner plates, the containers for a variety of household products (milk, shampoo, glues, pills, detergents, leftover food), and trash and garbage cans merely begin the list. The bodies of radios, lightweight camera housings, computer monitors, and televisions likewise are made from plastic. The list of plastic products used in our daily lives seems almost endless, yet all began either with an oil well or a coal mine.

Ceramic Products

Dinner plates, flower pots, coffee cups, electrical insulators, false teeth, spark plugs, wall tile, crockery--these are only a few of the things that are made from ceramic materials. The base material for most types of ceramics is either clay (from a clay pit) or ground-up silicate minerals such as plagioclase and orthoclase feldspar, wollastonite, tremolite, anthophyllite, and talc, all of which come from mines. New uses are being discovered for ceramics every year, but most are not well known to the general public; possible exceptions are the several new types of ceramic magnets that are now in widespread use to affix objects to our refrigerators. Meanwhile, it is a sobering thought that the finest Staffordshire china and the most beautiful Ming vases are products of humble clay pits.

Glass Products

Glass, whether used for windows, drinking glasses, eyeglasses, bottles, or TV and computer screens, is totally a product of mining. The soda-lime glass most widely used for commercial products contains silica (either from a sand pit or a sandstone quarry), trona (from a trona mine), limestone (from a limestone quarry), and feldspar (from mines, again). The feldspar provides the alumina to strengthen the glass. Decorative glassware sold as "lead crystal" owes its heaviness and sparkle to lead, another mining product. Moreover, the pigments for colored glass typically are mining products as well, as anyone who has studied the manufacture of stained-glass windows in churches can attest. Iron, cobalt, manganese, or gold produce green, blue, violet, and red glass, respectively. All four of these metals, plus more, come from mines; there is no other commercial source.

Wood, Paper, and Cardboard Products

The raw material for anything made of wood, paper, or cardboard is trees. Certainly we don't mine trees, nor in decades past did we plant them--we simply harvested what Mother Nature had provided us. Nevertheless, mining plays a large role in the manufacture of the wood, paper, and cardboard products that we use every day.

First, one has to cut the trees down. The blade of the saw or the head of the axe came from an iron mine. If a chain saw was used, it too has a metal blade, its plastic housing is a petrochemical product from oil wells, and it runs on gasoline and oil, two more petrochemical products.

Then, in order to make things like wood studs and plywood for houses, wood veneer for furniture, or toothpicks for our meals, the wood has to be sawn to size (metal blades) or peeled into thin sheets for plywood and veneers (metal blades again). The adhesives used for these latter two products are petrochemicals made from oil. Wood treated for outdoor use employs a host of preservatives, all of which contain components from the mining

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industry: creosote, for example, is derived from coal, and the chromium and arsenic used in pressure-treated wood are products of mines as well.

To manufacture paper and cardboard one has first to mash the wood to separate it into fibers. This involves heavy machinery, the metal for which came from mines. Fibers for the print industry are then soaked in sulfuric acid to bleach them (the sulfur is extracted from the caprock of subsurface salt domes), and additional chemical baths are necessary if one wishes to neutralize the acid to make archival-quality paper. The shiny, heavy paper used in oversized "coffee table" books owes its shininess and heaviness to clay, which is added to fill the pores in the paper so the print will make a clean impression--that is, inks do not bleed into clay-impregnated paper, so the print is crisper and the photographs more detailed.



Textiles

Textiles, which go into our clothes, drapes, bed linens, tablecloths, and blankets, can be divided into two groups: natural and synthetic. Both involve mining in their manufacture.

Let's consider natural textiles first. The principal ones are cotton and wool. Even if we discount the metal tractors that are used to prepare the cotton fields and plant the seed, and the phosphate rock in the fertilizer, and the petrochemical products in the insecticides--that is, even if we pretend that a truckload of freshly picked cotton owes nothing to mining--we can't go from raw cotton to a cotton shirt without involving mining-related products every step of the way. The cotton has first to be cleaned and spun into thread. The thread has to be woven into cloth, and the cloth then has to be dyed, cut, and finally sewn into garments. Every one of these processes involves metal machinery and the gasoline (from oil) or electricity (from coal) to power it. Even if you make your own clothes, what do you think your sewing machine and needles are made of? Similar arguments can be made for woolen clothes, starting with the metal shears that are used to shear the sheep.

Synthetic fabrics, meanwhile, are even more directly a product of mining. Nylon, rayon, and polyester are all made from either oil or coal.

Agricultural and Horticultural Products

Almost all nations produce a significant part of their food supply through agriculture. Think of all the food plants we grow in the United States: corn, wheat, oats, barley, lettuce, broccoli, tomatoes, various types of beans, potatoes, carrots, garlic, radishes, peanuts, and dozens upon dozens more. Other agricultural plants are grown for their fibers (cotton and hemp for string, twine, and rope), for flavorings (mint, wintergreen, plus nearly all spices), or for their medicinal value.

Agriculture on a commercial scale, however, depends heavily on mining for its success. Here's why. First the farmer must prepare the soil by tilling it. This involves metal machinery, and all of that metal came from mines. Then the seed must be planted, which typically involves more metal machinery. A tractor, for example, contains components from more than a dozen different kinds of mines, runs on diesel fuel (a product of oil wells), and is lubricated with oil and grease (oil wells again). If the crops require fertilizer, chances are good that the phosphate content of that fertilizer came from a phosphate-rock quarry. Many crops also require water beyond that supplied through normal rainfall, and the metal pipes and sprinkler heads for delivering that water all come from mines. Then the crops must be harvested,

cleaned, and packaged, all processes that require more machinery.

Nearly every step of a commercial agricultural operation involves components and materials that come from mines. Similar considerations apply to most steps of commercial horticultural facilities such as greenhouses and tree farms.

Even a typical household garden involves numerous mine-related products and materials. The blades for shovels and trowels, the nozzles and couplings for hoses, and the hinges on your garden gate are made of metals from mines.



The plastic for the garden hose comes from oil wells. Insecticides likewise can be traced back to oil wells--the active ingredients in most insecticides are petrochemical products made from oil. The fertilizer probably contains rock from a phosphate quarry, and the plastic, ceramic, or metal bowl in which you carry your produce from the garden to the kitchen is a product of mining as well.

Animal Products

Our society uses animals in many ways--meat and milk for nourishment, fur for clothing, hides for leather, and bones for fertilizer, to name a few. The importance of mining in this context is not so much to provide the raw materials, but to process them into something we can use.

Even something as simple as converting a wild deer into venison involves mining on several levels. If you are a hunter, unless you plan on strangling the deer yourself, you will need the products of mining to bring it down. Consider, for example, the lead slug of the bullet, the brass casing, and the sulfur and saltpeter in the gunpowder, not to mention the metal parts of the rifle itself. If you use a bow, the materials for the fiberglass of the bow, and the metal tip of the arrow, came from mines. You will use a metal car that runs on gasoline to transport your deer, a metal knife to skin the carcass and cut the meat, and a metal pan to cook it in.

Food

Most of us don't think that the products of mining go into the food we eat, but some do. Clay, for example, is a component of some soft ice creams and candies. Clay is composed of particles so very small that we can't distinguish them by touch, so a bit of watery clay in our mouths gives a sensation of creaminess (without the calories). That, plus the fact that clays provide bulk and weight at very little cost, are the reasons that clays (called "extenders" in the food industry) find their way into various foods. In our bodies they are inert; we don't metabolize them, but just pass them through.

More familiar examples of mining-related products are fortified foods. Some brands of cereal, for example, contain iron--literally. If you were to take such a cereal, put some in a glass of cold water, mash it into a watery pulp, and then stir a magnet through it, you'd find tiny particles of iron adhering to the magnet when you draw it out. There is nothing wrong with this. Your body needs iron, and this is one way of supplying it.



Even something as commonplace as a steak involves mining to bring it to your grocery store. To get steaks from a steer one needs various knives and saws to cut through meat and bone. The metal for the knife and saw blades comes from mines. Probably, when you bought your steak, it was sitting in a styrofoam tray and wrapped in transparent plastic. Both of these are petrochemical products, from oil wells.