

Mineralogical Society of the District of Columbia



MINERAL MINUTES

Vol. 69, No. 8

Mineral Minutes

October 2010

Club Meeting: Wednesday, October 6, 7:45 PM

The regular monthly meeting of the MSDC will take place as noted above. We meet at 7:45 PM in the lobby of the Smithsonian Natural History Museum.

Program and Speaker: "Mineral Photography."

The October 6th Program will be Bruce Gaber. Bruce is well known to those who attend Wildacres. In the past few years he has taught photography and pewter making. He also acts as the auctioneer for Wildacres and was the Eastern Federation of Mineralogical Societies auctioneer. He is an interesting speaker with a lot of knowledge to exchange.

Place: The National Museum of Natural History, Smithsonian Institution, 10th Street and Constitution Ave, Washington, D.C. We will gather at the Constitution Avenue entrance at 7:45 PM to meet our guard who will escort us to the Cathy Kirby room. If you park on the street, **THERE ARE NOW PARKING FEES, PAYABLE AT THE KIOSKS, AND ENFORCEMENT UNTIL 10 PM.**

Dinner: Some of us will meet for dinner at the Pier 7 Restaurant at 6:00 PM before the club meeting. Give President Andy a call at (301) 270-6790 so he can make reservations if you wish to attend.

Mineral Minutes – Facts, Figures and Another Way to Receive It

- Mary Bateman, Editor

We all enjoy receiving *Mineral Minutes*. It is packed with lots of information and knowledge. First, I want to thank all of those who contribute to *Mineral Minutes*. Your input is invaluable and makes this one great newsletter.

We need to be realistic about how much we can produce in the newsletter each month and how long our income can sustain it. The September issue of *Mineral Minutes* cost a

total of \$1.70 per copy. This included \$1.26 for printing each copy plus an additional \$.44 for postage. Both of these costs can only continue to rise.

To help keep the club's costs down, we would like to begin sending you an electronic copy starting with the November issue. We will send you both an electronic and hard copy for both the November and December issues, reverting to electronic issues beginning with the January issue.

Don't worry if you do not have a computer. The electronic issue is strictly voluntary and unless you let me know that you want the e-mailed version, you will continue to receive the mailed copy.

There are three advantages to receiving the electronic version—(1) the best of all, you get it before it even goes to the post office, (2) you save MSDC approximately \$1.70 each month, and (3) you will receive pictures in color when they are sent to the editor in color.

A sign-up sheet will be passed out at the October 6th meeting. If you can't attend the October meeting, just e-mail me, along with your name and e-mail address, letting me know that you want to receive the electronic copy.

The Prez Says - A Word From the President

- Andy Thompson

The Star Sapphire of Ardaban: Know The Inside Story?

Star sapphires, as readers know, are typically neither rare nor very expensive compared to diamonds and rubies. But there is one star sapphire which decades ago gathered some degree of fame as it was taken on a national tour. At each train stop the stone's owner had arranged that it be met by armed guards and transported in a Brinks truck to the local jewelry sales event. At the end of its fabled career, the owner donated it to the Smithsonian Natural History Museum where it remains today.

The story and significance of this gemstone, the Ardaban star sapphire, has been an often recounted theme in the life of two promoters, a father and son, Samuel and Jerry Weintraub. The son recently shared this and other entertaining stories in his book, When I Stop Talking You'll Know That I Am Dead (2010), coauthored with Rich Cohen.

The story goes as follows. His father, a jewelry wholesaler in Manhattan, bought the large star sapphire overseas. He decided to use it as a way of drawing a crowd of jewelers to his sales event. The visitors came to view the well advertised 316 carat blue sapphire, but he sold them the rest of his inventory. He never sold the Ardaban sapphire, of course, because it was too valuable as a promotional tool. His young son, Jerry, seeing this technique, learned the lesson that regardless of the commercial value of the objects you want to sell, it is the story people buy.

Later in life, Jerry embodied that lesson and became a world-famous promoter of entertainment events, such as taking Elvis Presley on his first national concert tour, working with stars like Frank Sinatra and producing the hit films *The Karate Kid*, and *Oceans 11, 12 and 13*. Snippets of the book's interesting reflections are found on websites listed below and in various video clips of promotional interviews for Jerry's book.

The Weintraubs were very clear in their statements that the Ardaban sapphire was not worth big bucks. Samuel, the Father, was not trying to fool anyone. Rather, by dressing it up with the timely publicity, armed guards and armored trucks, he gave the gemstone an identity that was larger than life and drew an audience for his jewelry sales.

What I found interesting about all this is how it resonates with what is evident in current events ranging from the politics on Main Street to the gyrations on Wall Street. How often this happens, where stories, repeated frequently and forcefully, gain a following regardless of whether it bears an iota of truth. On the other hand, when the story is rooted in reality, one could imagine its power and appeal should be all the greater.

So what implications might this have for MSDC and mineral clubs? The fun question I took away from Sam's and Jerry's experiences with promotional events is: How can an emphasis on "story" help promote our club's shared interest in minerals and geological education? For example, should clubs take a mineral show on the road to local organizations and schools with our members dressed up as armed guards? Have you told others your own story of what you find fascinating about minerals? If anything comes to your mind, perhaps you could write a note to our editor, Mary Bateman, for inclusion in a future edition of *Mineral Minutes* (mbateman1@verizon.net).

Alternatively, perhaps you could share your thoughts with our MSDC board of directors and other members during our social gathering after our monthly club presentations.

I look forward to seeing you at our October 6 MSDC gathering, if you can make it, as we convene to be fascinated by Dr. Bruce Gaber's stories of his mineralogical endeavors.

<http://www.cnn.com/2010/SHOWBIZ/Movies/04/29/jerry-weintraub/index.html>
<http://abcnews.go.com/GMA/Books/film-producer-jerry-weintraub-life-lessons-stop-talking/story?id=10299188&page=1>
<http://jewelry-blog.internetstones.com/famous-gemstones/star-of-artaban>

MSDC Meeting Minutes – September, 2010

- Betty Thompson, Secretary

Andy Thompson expressed appreciation for past presidents Cynthia Payne and Ed Fisher. He introduced guests: Steve Johnson, a friend of former member Jim Sobeleski (now serving again in Afghanistan), and Joe, Terry, and Alexis. Treasurer Rick Reiber reported that we now have 12- and 25-month CDs as well as the checking account; also, we have a PO Box so that the website can offer an immediate option for new membership registrations without publicizing anyone's personal address. The June minutes were approved as published. Vice president and program chair Tom Tucker announced that Bruce Gaber will speak in October. Betty Thompson, who has been working on the website, described Angelo Cicolani's suggestion that it include MSDC's history and asked for help in creating this information. Betty also welcomes additions for the online calendar, e.g., nearby shows; email her at bdthompson01@yahoo.com. Andy outlined the change in how door prizes will work and pointed out the table of specimens from which the winners may choose their prizes.

For Geology in the News, Andy noted that the Carolina Emperor emerald, 310 carats when found at Hiddenite, NC, has yielded a 65-carat faceted gem. Michael Wise of the Smithsonian has been quoted as saying, "I don't know of any faceted emerald larger than this."

Marie Brown of the NoVa Mineral Club invites all MSDC members to benefit from her long years of collecting at a private sale at her home on October 2. Contact Andy for location and details. Andy sent out emails about this; if you didn't receive them and would like to be on his MSDC email list, let him know at thompson01@erols.com. Marie also let Andy know of her visit with much-missed MSDC

member Jennie Smith, who has started a mineral club in Dallas and is doing great.

Cynthia Payne encouraged people to visit the Baltimore Micromount Symposium on October 1-3, featuring lectures about minerals from Tanzania; Gold Hill, Utah; and the San Juan Mountains of Colorado.

Andy Muir and Alexis won the door prize drawings, and chose barite from Palos Verde and apophylite amethyst, respectively. Andy thanked Susan Fisher for her generous donation of future door prize specimens. The Thompsons provided refreshments.

Following the business meeting, Tom Tucker introduced much-published Scott Southworth of the US Geological Service, who gave an amazing virtuoso performance as speaker. In anticipation of his presentation about Piedmont geology, David and Leslie Nanney had taken the Billy Goat Trail at Great Falls and quickly shared their splendid slides as a prelude to the main talk. When the computer we supplied was unable to support the later software version of Scott Southworth's prepared presentation, he used the Nanneys' photos to give a marvelous ad-hoc tour of the geology of Great Falls and Mather Gorge. His grace in improvising, the depth of his expertise, and quality of his speaking skills made this a memorably fine evening. Plus he's willing to return to give his prepared Piedmont talk, so we have a guarantee of future delightful learning.

Summary of the MSDC September Program -

Geology of the Great Falls of the Potomac and Mather Gorge (and a PS on Sugarloaf Mountain) as reported by Betty Thompson

Scott Southworth has been a geologist with the US Geological Survey for 30 years. His interest in rocks began when he was a youngster finding sharks' teeth east of Fredericksburg, VA, along the Potomac River. That curiosity continues to yield extensive research about the Piedmont and a tall pile of publications, many available online through USGS and some free. They include 34 USGS catalog items, like *Geology of Loudon County* and *Geology of the National Capital Region* (2004), which won the Geoscience Information Society's Best Guidebook award and was produced in association with the Geological Society of America regional meeting. His *Geology of the C&O Canal* is not free but is available by mail at <http://pubs.usgs.gov/pp/1691/>; it also won the Geoscience Information Society's Best Guidebook award. Just google him or search his project web site

<http://geology.er.usgs.gov/eespteam/smoky/> and you will find many, many tempting routes to learn about what's under our feet in the DC metro area and in the whole Piedmont and Blue Ridge, from Pennsylvania to Georgia.

Scott had prepared a presentation that focuses on the Piedmont. At the absolute last moment, it became clear that the MSDC-supplied computer could not support the later software version of his presentation. Drawing on his immense expertise and equally impressive flexibility, with zero prep time he gave an impromptu geological tour of the Great Falls of the Potomac and Mather Gorge, just below the Falls. He used beautiful slides that David and Leslie Nanney had taken there the prior weekend, which they had shown briefly as a prequel to his planned presentation. So this talk became a prequel to the Piedmont presentation, which he will most graciously give at a future meeting.

A number of years after Avery Drake at the USGS asked Scott to work with him on the western Piedmont, Scott decided also to explore the "backyard" of his Virginia home: the C&O Canal and great Falls. He noted that Park Service staff often must focus on managing their parks, with little time to explore the land itself. So, as part of their sister agency in the Department of the Interior, the USGS, Scott began to tell them much more about the land they manage at Great Falls National Park.

The Potomac's fall line is where the upland bedrock becomes alluvial or marine coastal plain. The upland bedrock dates to before and during the Taconic orogeny, about 600-440 million years ago. Below the Falls, Theodore Roosevelt Island is an eroded bedrock island. If you cross the Roosevelt Bridge, the outcrop on the north side of the bridge is the last outcrop of the Piedmont. After that, it's alluvial sediment deposited on bedrock. The major cities of New York, Philadelphia, Washington, DC, and Richmond lie on this line where sediment overlaps bedrock, because ships could reach these locations below the falls of various rivers while the falls themselves provided energy for commerce.

Nowhere are the rocks of this geological structure clearer than at Great Falls. Our entire area sits on the same rock formation, but the waters of the Potomac have exposed them at Great Falls. Geologists name rock formations based on the locality where they are best observed. Originally the rock formation that includes our area was named the Wissahickon after the creek near Philadelphia where the formation was first identified. In the 1950s geologists documented similar rocks in our area. (Remember that this was before the recognition of continental drift or plate tectonics.) In the 1980s, Avery Drake of the USGS pointed out that Mather Gorge is the

best place to see these rocks and therefore the formation is now called Mather Gorge.

The formation is composed of metagraywacke and schist. Graywacke (a hard, dark sandstone with quartz and feldspar in a compact clay matrix) is thicker and very resistant, which explains why Great Falls is where it is. Greywacke and schist are integrated and interrelated at all scales; you can't really map the separation unless you choose to simply show the dominant material at a particular point. Rocks like these are very difficult to work with because the metamorphic material got so hot and was buried so deeply. Scott used the Nanney's slides to illustrate this formation.

In other slides, he focused on Bear Island. Bear Island is mostly bedrock, maybe with some sediment-filled potholes. There is a migmatite zone on the southern end of Bear Island, with gorgeous wavy marble-sized forms, crystallized and partially reconstituted. There are no fossils here because these formations likely *predate* fossils! Igneous rocks are dated through their zircon crystals. The rock shows lots of erosional features like channels and potholes; if you remove quartz grains from them, analysis can tell you when it was exposed to the sea. Studies show that the dominant erosion event in the Mather Gorge was about 35,000 years ago. The Gorge was not cut out by glaciation. Although the Laurentide ice sheet was huge, from the Arctic to central Pennsylvania, and a full mile thick, it didn't come this far south. It caused the climate here to be very cool, with howling winds. But the Mather Gorge erosion came from the later glacial *outwash and rains*, not from the glacier itself.

Along Great Falls, some of the erosional channels have a very unusual step-like appearance. Don't be fooled: these steps were carved in recent years as fish ladders to help the shad, herring and other fish to get upstream, past the falls! At the top of the cliffs that line the gorge, one area is labeled "bedrock terrace forest" but the forest itself is only about 70 years old. The area was clear-cut more than once. It's hard for a forest to grow on bedrock, but there are many plants that have made homes here; some may be rare. Scott noted that the Potomac River "bulldozed" the parking lots on the Virginia side of Great Falls Park, exposing the bedrock and then, about 35,000 years ago, cutting down to the level of Bear Island's bedrock. Those who've studied this think it was probably a very rapid process. Bear Island is the only place in the gorge where you can take a mineral sample and get true lab results. Other rocks in the gorge have been so affected by what has happened since their formation that they are almost impossible to date.

In another slide, he pointed out that the gorge holds a lot of exotic rock materials. There are 3-foot-diameter boulders

as well as many other rounded alluvial rocks that have rolled here via the Potomac headwaters from Seneca and Harpers Ferry.

Several slides gave lovely views of vein quartz, often with folds. The quartz was introduced as fluid during deformation, which results in transposition. Others showed a fairly rare formation of fine parallel lines or ripples: mesoscopic vein quartz and pin-striped gneiss. This occurred because individual seams of quartz were rejected during deformation and cut by vein quartz. The cracks opened due to Mesozoic expansion as the Atlantic was opening up. The quartz carried the gold that has been mined in many Maryland creeks.

The photos included beautiful views of the rock face. The obvious upright strips and lines are the original layers of sediment, now rock and now upended in a dramatic illustration of geological change. Potassium and feldspar crystals have been found, as well as turbidites, which are formed during sudden deep drops of sediment into an oceanic trench (as in Monterey Canyon in California; see USGS website). The rocks show soft features that are sediment deformations which occurred deep underwater and due to gravity. In some areas of the gorge there has been too much geological action to get an accurate orientation of the rock.

The obvious upright fractures in the rock face give wonderful evidence of the Taconic orogeny. On the tops of the rock face are lamprophyre dikes – Devonian, 360 million years old. But if you put your arm down into a fracture, you can literally reach back into time. The fractures cut through, straight as an arrow, with no folds, into rock that was deformed about 475 million years old; dikes intruded and created the fractures 360 million years ago. The wondrous part: these long fissures have not changed since then; the fractures remain as straight as when they formed so many ages ago. And here at Great Falls, they are visible from far distances.

Another marvel: Mather Gorge is so straight that it could look man-made. Scott commented that you could lay a 5-kilometer ruler along the gorge. But there are no cross-fractures in the rocks along its parallel sides. Given that regularity, Scott noted that geologists draw a fault line along the gorge with very little evidence; the only way to prove the existence of a fault would be to drain the river.

In response to a question, Scott also shed light on Sugarloaf Mountain in Maryland. As a monadnock (an isolated small mountain), Sugarloaf has always been an attraction for people. It's very complicated rock – a very resistant quartzite surrounded by softer rock in the Urbana formation, together with very deformed slates. In the 1950s, John Hopkins University students under David

Scotford and Dick Nickelsen devised a method of outcrop mapping. Most people think that geologists map by doing transects, that is, by walking across rock in several places and "connecting the dots." Instead, this team pioneered a really wise method: they walked a rock bed and mapped it as it lay. When Scott did the same at Sugarloaf, it was clear that Sugarloaf is part of the Weverton Formation of the Chilhowee Group, the same as in the Catoctin Mountains. This is Blue Ridge stratigraphy popping up through the Piedmont, which sounds complicated but became really simple in Scott's quick free-hand drawing. The Frederick Valley is Cambro-Ordovician limestone and dolomite. The Piedmont sheet that came up over it has been eroded away, which exposes the valley. But the Weverton Formation, which thrusts higher in the Blue Ridge and then sinks below the Frederick Valley surface, rises again to create Sugarloaf.

Scott Southworth shared with us his wealth of knowledge of Great Falls, Mather Gorge, and, as a postscript, Sugarloaf Mountain: our complex local geology. His presentation was fascinating and wonderfully informative in enabling us to glimpse the forces at work both in individual rocks and in the overall formation of Mather Gorge. He created this superb presentation ad-hoc, with not a moment to prepare, drawing on his immense expertise, his brief look at the Nanney's slides, and his skills as a speaker. We are eager for his return to give us "the rest of the story" of the Piedmont. And we are very grateful for his marvelous introduction to the world under our feet right here at home.

My favorite Things - Interesting Mineral Localities and Museums

- Susan Fisher

As you are surely aware by this time, I have a number of favorite things -- minerals, good friends, interesting geological information, great road trips and warm fall days, just to name a few. Recently, I got to combine most of these things in a trip to Montana and Wyoming with my best friend, my husband. I was lucky enough to be able to tag along with my husband when he taught a class in South Dakota. When he finished that class we drove over to see Devil's Tower and Yellowstone Park in Wyoming as well as sites in Butte, Helena, Bozeman and Billings Montana. This was almost a geology overload - marvelous!!!

Most of us remember Devils Tower from the movie about UFOs, "Close Encounters Of the Third Kind". The movie certainly did not do the unique geology of Devil's Tower justice. To see a volcanic neck rising majestically from the surrounding sedimentary rocks is a real thrill. While we were there, we got to watch a few rock climbers pit

themselves against the vertical cracks in the sheer sides of the tower.

When we reached western Montana, I was fascinated to see the huge, abandoned open pit of the Berkeley Mine in the middle of the city of Butte. It is so large that one cannot get a real idea of the size until one notices the buildings across the pit from the viewing platform. Those full sized buildings look like furnishings for a doll house. As the pit slowly fills with a toxic brew of ground water and heavy metals, the city and the mining company are faced with the daunting task of keeping the city water supply clean and protecting migrating birds. While in Butte, we took a trip to the local university. The mineral museum at Montana Tech is a delight! Nice displays, super minerals and a knowledgeable staff make a visit a not-to-be-missed experience. (They have two covellite specimens with beautiful standing tabular crystals that are worth a trip in themselves to see. I have a new addition to my I-really-want-one list for my collection.)

The Museum of the Rockies in Bozeman is a paleontologist's dream. (They have a number of other great displays, but I left those to Ed as I tried to learn as much as I could about the dinosaur remains that have been found in the upper Rocky Mountain region.). The dinosaur remains are arranged in a manner that even a confirmed non-fossil person like me could understand, enjoy, and assimilate. This was the first time I really got a good idea of the size differences between young dinosaurs and their adult parents. I also saw the physiological changes that marked the development of the juveniles.

What can one say about Yellowstone Park? It is fantastic!!! After years of reading about it, I finally got to see a mud pot bubble and burp, a hot spring simmer and steam, and a small geyser spray water. I got to experience the thrill of knowing that I was walking on the floor of a giant caldera with magma less than two miles beneath my feet. The country is beautiful and the bison are huge. (We ended up being enveloped in a slow moving herd that used the road as a path to cross a marshy area. They ignored our truck and we got to watch them amble by.)

I hope you can forgive me for this rather lengthy verbal postcard, but I do have a point to make -- there are wonders of the natural world to be experienced by all of us. Just reach out a little and do it. Enjoy!

Spain's Riotinto Mine: The World's All-Time Favorite Mineral Site?

By Andrew D. Thompson

Several academics have praised the Riotinto mine in southwestern Spain as a geologist's paradise. Why so? At

practically no other place on earth “has nature exposed in one spot such richness and variety of minerals,” claim anthropologists from the University of Seville (see *Archeology*, September-October 2010). Beyond its legendary silver and copper, there’s an abundance of additional metal ores. But why would professors outside the geology department be so interested in this particular mine site?

There is strong evidence that for at least the past five thousand years, the Riotinto mine has been worked by succeeding cultures. Iberians and Tartessians began mining the site and centuries later they were followed by the Phoenicians, Greeks, Romans, Visigoths, Moors and finally by the British. The local on-site museum contains artifacts which span the millennia, beginning with a 5,000 year old stone hammerhead, Tartessian pottery and Phoenician oil lamps. From the Roman-period the museum displays iron picks, hammers and a large wooden waterwheel. These findings encourage researchers to see the Riotinto as “perhaps the oldest major mine in the world” (www.mindat.org). Tourists may want to visit the museum electronically before finalizing travel plans (<http://www.andalucia.com/province/huelva/riotintominerapark/home.htm>).

The mine site itself provides evidence that the Copper Age’s local inhabitants of the third millennium B.C. had been extracting malachite and azurite. Both are soft copper carbonates which were used for beads and light green and deep blue pigmentation, respectively. But it has been the mine’s silver and copper veins which have claimed the major attention of later generations. By 1100 B.C., the Phoenicians arrived and traded their textiles, ceramics and jewelry in exchange for the local Tartessians’ metal ore. Phoenicia desperately needed the silver to pay its debt to the Assyrians. That increased the demand and moved the mine toward industrial levels of production.

By the 7th century B.C., the economy of the eastern Mediterranean incorporated silver and copper coinage causing even further ramping up of metal production. With the ascendency of Rome and its need for metal coinage to pay its soldiers, building laborers, and the farmers who grew the subsidized grain, the Roman empire further increased the demand for silver which resulted in Riotinto becoming the largest silver mine in the entire empire. Centuries later, when the emperor overspent, he devalued Rome’s currency by substituting copper for the dwindling supply of silver. The demand for metal was there and the mine provided the supply, making it seem like a match made in heaven with a fairy tale ending. But there seems to have been more to it.

Best Or Worst Of Mines?

The Riotinto mine is part of the Iberian Pyrite Belt, consisting of eight very large mines, making this area of Spain south of the port city Huelva, one of the largest sources of sulfide in the world. Pyrite, iron sulfide, decomposes when exposed to air resulting in a release of sulfur dioxide which is toxic to the environment. Researchers have tested core sample drillings in Greenland dating back many centuries and have found deposition of toxic chemicals having the identical signature of the Riotinto mine. Additional environmental studies found clamshells, dating from 2475 B.C., polluted with heavy metals, again associated particularly with this mine. On the other hand, for the centuries when the mining at Riotinto had ceased, environmental scientists found less pollution had been deposited in the earth’s crust.

This site seems to have always been a source of a basic level of pollution. Even before mining began, the atmosphere was decomposing the pyrite which was on the ground’s surface, turning the local river a red, wine-colored tint (rio tinto), which killed off fish and vegetation. So imagine the impact of having open-pit mines, with their vast slag heaps, for thousands of years, leaching sulfides into the surrounding land, air and water.

The cause of the toxicity is that this pyrite laden mine has one of the greatest concentrations of sulfur found anywhere in the world, with a content ranging between 0.5 and 2 percent. Valuable as that is in itself for industrial producers of sulfuric acid, the economic value of the sulfur is secondary to the mine’s high silver and copper content. That explains the large number of employees working at the Riotinto mine which peaked in 1910 when there were 17,822 people on the payroll. Although it closed in 2001, the Cyprus-based mining company, EMED Mining, recently bought the property and hopes to reopen its operation in 2011

Historically, there was one lengthy period shortly after the decline of the Roman Empire, when the mining activity slowed considerably. This was due not only because of the dark ages’ loss of Roman engineering know-how, but also because local forests had been depleted due to the high demand for lumber to fire the smelting furnaces. Centuries of inactivity followed. In 1556, Spain’s King Phillip II sent a priest named Diego Delgado to search for new mines and he “discovered” Riotinto, documented his find and sent the King small silver samples, but to no avail. By this time, Spain was receiving large shipments of inexpensive silver from the new world.

It was not until the arrival of the British in the mid-eighteen hundreds that mining revived on this site. In 1873 a modern mining firm reestablished industrial-strength metal extraction and took the name Rio Tinto Plc, as distinct from the name of the mine and region, Riotinto.

That firm expanded its holdings and is currently mining on six continents. Its shares trade on the New York Stock Exchange under the symbol RTP. In August of 2010, the company announced record earnings. See http://www.riotinto.com/media/18435_media_releases_19511.asp. Rio Tinto is not the world's largest mining company. That honor goes to BHP Billiton, the Australian mining giant that made news in August by initiating a hostile takeover of the world's largest producer of fertilization minerals, the Potash Corporation of Canada

Conclusion

For five millennia, this mine has brought unprecedented wealth to its owners. But it was not without cost to the miners, local inhabitants and environment. The high concentrations of sulfur and heavy metals undoubtedly took its toll on the health of all involved. Even today, some of the ancient artifacts in the museum continue to reek of sulfur. Nonetheless, if traveling in the area, readers may want to consider visiting the museum (<http://www.andalucia.com/province/huelva/riotintominingpark/home.htm>). The very name of the river, in effect "red river," with its absence of fish, signaled to one and all that this water could not be drunk without ill effects. Perhaps this powerful interaction between the mine's wealth and its danger to the successive cultures which worked it, has helped bring the Riotinto mine to the attention of modern anthropologists. What we see here is evidence of a new emerging discipline, the anthropology of mining.

For some reason, the Disney movie of Snow White and the seven dwarfs comes to mind. That 1937 film was based on a story collected by the Brothers Grimm in Germany in the early eighteen hundreds, when mining in Europe was a growing and key industry. Each day, the seven dwarfs left their home in the forest and their treasured, pure Snow White, happily singing their Heigh-Ho song. Off to the mine they would go, only to discover, one day, their Snow White had been poisoned by the wicked queen. In the fairy tale, a prince saved the day and brought her back to life. One wonders if modern technology one day will be able to replicate this princely deed, free everyone from the ill effects of its toxicity and bring the world's favorite historic Riotinto mine back to life.

November Program **Tom Tucker**

We have invites out to a couple of interesting speakers, both of whom are at the Denver Show, and we expect to have a definite program lined up to be announced at the October meeting.

Upcoming Events: Start planning those fall trips now!

October 1 – 3: Elkridge, MD -- Annual Desautels Micromount Symposium hosted by the Baltimore Mineral Society. MHA Conference Center,. Registration and information: cscrystals2@verizon.net.

October 1 – 3: Dallas, NC -- 33rd Annual Gem, Mineral & Faceters Show sponsored by the Gaston Gem, Mineral & Faceters Club. Gaston County Park

October 16-17: Johnstown, NY -- 12th Annual Mineral Show & Sale sponsored by the Fulton Co. Mineral Club. Johnstown Moose Lodge, Rt. 30A; Johnstown, NY.

October 23-24: Warwick, RI -- Rhode Island Mineral Hunters Annual Show sponsored by Rhode Island Mineral Hunters. CCRI Knight Campus.

October 23-24: Henrietta, NY -- 41st Annual Rochester Gem, Mineral, Jewelry & Fossil Show sponsored by the Rochester Academy of Science Mineral Section and Rochester Lapidary Society. Monroe Co. Fair & Expo Center .

November 6 - 7: Exton, PA -- Gemarama 2010 sponsored by the Tuscarora Lapidary Society. CFS, The School at Church Farm.

Mineral Minutes: Call for Articles and Pictures -- Next Deadline

Where's that article you were thinking about? Still in your head? Why not sit down right now and get it from your head to a piece of paper. Once on the paper, send it to Mary Bateman for inclusion in the November *Mineral Minutes*. Remember, it need not be perfect, the editor can help you by formatting it and checking for spelling and grammar errors.

The **deadline for the November issue of the *Mineral Minutes*** will be **October 10**. If you have an article or pictures that you wish to share, please e-mail them to Mary Bateman at mbateman1@verizon.net or mail them to 2700 9th Street South, #203, Arlington, VA 22204-2328. Articles can be included in the body of your e-mail or attached as a Word document or .pdf document.

MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

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Director: Dave Nanney
Director: Cynthia Payne
Director: Don Greaves

Meetings are held the first Wednesday of each month at 7:45 p.m., in the Kirby room, the National Museum of Natural History, Smithsonian Institution, Washington, DC. (No meetings are held during July and August.)

The purpose of this Society is to promote interest in mineralogy, geology, and related earth sciences and to encourage mineral collecting. An annual scholarship is awarded to a deserving student in the related field.

Dues – Due by 1 January. \$20 for a single membership, \$25 for families.

The Mineral Minutes is the bulletin of The Mineralogical Society of the District of Columbia, Inc.

The Mineralogical Society of the District of Columbia is one of the founding Societies of the Eastern Federation of Mineralogical and Lapidary Societies.

VISITORS ARE ALWAYS WELCOME AT OUR MONTHLY MEETINGS!

MINERAL MINUTES

**Newsletter of the Mineralogical
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