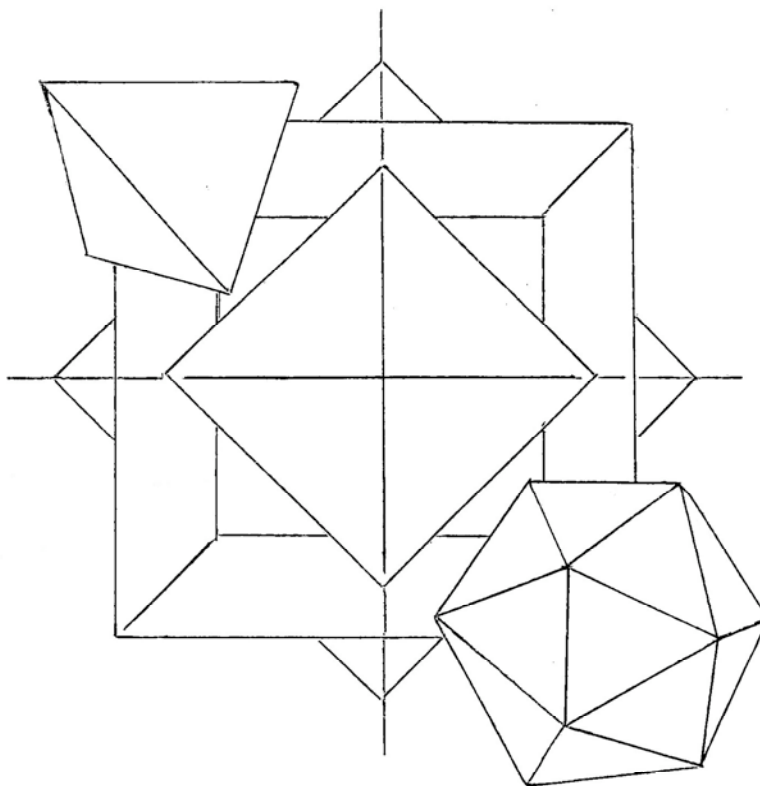


The 42nd
Rochester Mineralogical
Symposium



April 23 – 26, 2015

S. Robinson, 2013

42nd Rochester Mineralogical Symposium

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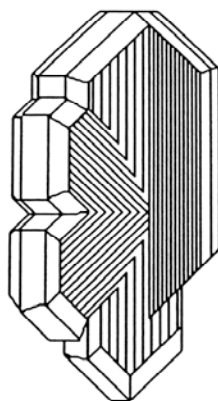


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Our warmest welcome to the 42nd Rochester Mineralogical Symposium. We continue this year with our program designed to provide excellent speakers, new information, camaraderie, displays of extraordinary specimens, opportunities to acquire desired objects—all in a familiar and comfortable environment. Our speakers for this year include several who have never lectured here before and others who are familiar faces. Most of their topics will be quite new to our collective experience. This year's Technical Session is again robust! We welcome numerous new attendees and hope you enjoy our meeting. We appreciate the continuing support of returning attendees. Last year, everyone was pleased with our electronically printed Program Notes, with some color, so we are continuing to do so. As usual, everything is different, yet everything is the same.



Superb Thumbnail Specimens—Clockwise from upper left: **Pyrite**, Ground Hog mine, Gilman, Colorado (Mark Mauthner photo); **Sugilite**, (Discovery Pocket), N’Chwaning II mine, South Africa (Jeff Scovil photo); **Wulfenite** and **Mimetite**, San Francisco mine, Sonora, Mexico (Mark Mauthner photo); **Realgar**, Fenghuang-Chatham Mercury mine, Hunan, China (Jeff Scovil photo). Collection of Dr. Alex Schauss

PROGRAM

Thursday Evening, April 23, 2015

- PM 4:00-6:00 Cocktails and Snacks – Hospitality Suite, Room 400 (4th Floor)
- 6:00-7:45 Dinner – Baxter’s
- 8:00-9:15 **Gem Pegmatites of Afghanistan and Pakistan – Dr. Peter Lyckberg**
Peter Lyckberg was born in 1962 in Göteborg, Sweden, a district rich in pegmatite with various mineralisations which Peter started to study as a child. At the age of 8 he found his first great pocket in a pegmatite and found plumbomicrolite, a mineral new to Sweden. In the coming years he found, explored many unknown mineral and gem carrying pegmatite and mineral deposits, first in Scandinavia, then on all continents. He studied gem rough from India, Sri Lanka, Brazil, Russia, California, Maine and African countries in early years (pre teen) and later worldwide material. He started his first subscription to a gemmological journal in 1972 (Lapidary Journal) followed shortly by many others. A major career as a collector, consultant, author, and lecturer followed. For the past 15 years he has been an inspector at the European Commission, General Directorate for Energy, and is an independent researcher in gem deposits. During the years he has been an advisor to institutions, companies, journals, museums, independent miners and collectors all over the world.
Tonight, Peter will present firsthand information on the gem deposits of two famous areas, Afghanistan and Pakistan. We welcome Peter Lyckberg’s return to the speakers’ podium.
- 9:15 Cocktails and snacks in the Hospitality Suite on the 4th floor will be available throughout the rest of the evening. Dealers’ rooms will be open at this time. All of the dealers are located on the 4th floor.

Friday Morning, April 24, 2015

- AM 9:00 Announcements
- 9:15-10:15 **Maine Gem and Mineral Museum – Dr. Carl Francis**
Carl Francis is well known to RMS attendees as a speaker and moderator of our technical session. He holds a bachelor’s degree in geology from Amherst College and master’s and doctoral degrees from Virginia Polytechnic Institute. He served as curator of minerals for the Harvard University collection from 1977 to 2011. Always interested in the minerals of New England, Carl Francis has been deeply involved in the development of the new Maine Gem and Mineral Museum in Bethel, where he serves as curator. This morning he is going to give us an up close and personal introduction of this new institution in the mineral world. We warmly welcome Carl Francis back to the speakers’ podium.
- 10:15 Coffee Break
- 10:30-11:30 **Minerals of Belgium - Herwig Pelckmans**
Herwig Pelckmans was born in 1962 in Antwerp, Belgium. When he was ten, his parents gave him a comic book about the evolution of life on earth that included a description of finding dinosaur remains in Mongolia. Before long, Herwig had found large bones and teeth himself. That they were whale bones and shark teeth, and not dinosaur fossils, mattered little because he had already been bitten by the collecting bug.
Herwig has traveled and collected widely in Europe, the United States and parts of Africa and Asia. He has long shared his expertise with other collectors through talks and articles. Recently he has been advocating the use of the polarizing microscope and spindle stage as an inexpensive and reliable tool for mineral collectors who want to

identify their unknown specimens. Herwig retired from the Belgian Army in 2013 where he was an officer and database administrator. He has found that life is even more hectic in retirement. He lives with his wife and three children in the small town of Hasselt, Belgium.

Today, Herwig will introduce us to the minerals and mineralogists of Belgium. Even though it is a small country, it contains the type localities for 18 mineral species. We warmly welcome Herwig Pelckmans to his debut at the speakers' podium.

11:30-1:00 Lunch and Shopping Break

Friday Afternoon, April 24, 2015

- PM 1:00 Contributed Papers in Specimen Mineralogy - *Dr. Carl A. Francis* - Moderator
- 1:00 The garnet line in Oxford County, Maine, pegmatites by **M. M. Felch**, W. B. Simmons, A. U. Falster, and K. L. Webber.
- 1:15 Trace elements in borosilicates from some New York pegmatites by LA-ICP-MS by **M. V. Lupulescu**, J. Chiarenzelli, J. W. Singer, and M. Hawkins.
- 1:30 Garnets in the Henryton Pegmatite, Carroll County, Maryland by **C. A. Kearns** and J. A. Nord.
- 1:45 Mineralogic study of micro-minerals in miarolitic cavities in alkali dikes, Augusta County, Virginia by **L. E. Kearns**, R. Rothenberg, T. Tucker, R. Tibbit, D. Smoley, R. Rowe, and T. Steede.
- 2:00 Cerianite-(Ce) from the Wausau Complex, Marathon County, WI by **T. W. Buchholz**, A. U. Falster, and W. B. Simmons.
- 2:15 A potential new tantalum district in the Upper Midwest by **A. U. Falster**, W. B. Simmons, and T. W. Buchholz.
- 2:30 Phosphate mineral paragenesis at the Silver Coin mine, Humboldt County, Nevada by **P. M. Adams**.
- 2:45 Mineralogy of a new pegmatite near Wellington Lake, in relation to the South Platte Pegmatite District, Colorado (USA) containing chemically zoned fluocerite-bastnäsite crystals by M. B. Rasche, E. J. D. Anderson, A. Skewes, J. Allaz, C. Stern, **P. M. Persson**, and K. Pfaff.
- 3:00 A new occurrence of ludwigite from Potrero Chico, Nuevo Leon, Mexico by **S. L. Hanson**, A. U. Falster, and W. B. Simmons.
- 3:15 The collection and cataloging of John Marshall (1931-2008) by **B. Poulin**.
- 3:30 Rare hematite twins of {012} from the Kalahari Manganese Field, South Africa by **R. P. Richards** and M. Zorz.
- 3:45 End of Technical Session

4:00-5:00 **Thirty-five Years of Collecting Connecticut Minerals – Tony Albini**
Anthony J. “Tony” Albini began collecting minerals in his native Connecticut in 1978 and quickly developed an emphasis on field collecting. He was fortunate to have the late Richard Schooner as his mentor. Schooner was an expert on the geology and mineralogy of central Connecticut and Tony accompanied him on more than 200 field trips. Tony Albini earned bachelor’s and master’s degrees in sciences from Central Connecticut State University. He taught science in inner-city schools for more than 12 years, developing two new courses— Forensics and the Geology of Connecticut. He also spent about 30 years working in the environmental field in contaminated site clean-up, toxic waste removal, and emergency response, winning multiple awards for his work. Today he is going to reprise his thirty-five years of field collecting in Connecticut. We warmly welcome Tony Albini to the RMS speakers’ podium.

Friday Evening, April 24, 2015

6:30-8:00 Dinner – Baxter’s

8:15-9:15 **Thumbnail-Sized Minerals: Aesthetics, Colors, & Rarities – Dr. Alex Schauss**
Dr. Alex Schauss holds a bachelor’s degree from the University of New Mexico and a doctoral degree from California Coast University. His intense interest in minerals began when he was seven as he began visiting the nearby American Museum of Natural History in New York City and soon was mentored for eight years by Dr. Frederick Pough. Being both a thoroughly hooked mineral collector and a track star led him to enroll at the University of New Mexico. Immediately joining the Albuquerque Gem & Mineral Club soon led to collecting smithsonite underground at the famous Kelly mine near Socorro and wulfenite at various sites in Arizona.

Alex attended his first Tucson Show in 1967, when it was held in a tent near the airport. Soon thereafter he began to swap out his larger specimens for thumbnails so as not to completely fill his dorm room. His continuing passion for thumbnails has led him to assemble one of the finest thumbnail collections in existence. He has won 9 national AFMS trophies and both the McDole (1989) and Desautels (2010) trophies at Tucson. Alex has many professional memberships and is the current president of the Friends of Mineralogy.

We are pleased that today he will share his perspectives on thumbnail minerals illustrated by photographs from his personal collection. We warmly welcome Dr. Alex Schauss to his debut at the RMS speakers’ podium.

9:15-??? Continuation of “Shop’til You Drop”, spirits, and fellowship – 4th Floor

Saturday Morning, April 25, 2015

AM 9:00-10:00 **What’s New in Minerals and Localities, Part I – Jeffrey A. Scovil**
Each year Jeff Scovil shares his excellent photographs of minerals that have appeared on the market since the previous Symposium. Again this year, we welcome Jeff to the speakers’ podium for What’s New in Minerals and Localities.

10:00-11:00 **What’s New in Minerals and Localities, Part II – Contributions from the audience.**

11:00-11:30 **The Life and Collection of Eberhardt W. Heinrich - Dr. Chris Stefano**
Dr. Christopher Stefano is the associate curator of the A. E. Seaman Mineral Museum at Michigan Tech University. He holds a bachelor's degree from Kent State University and a PhD from the University of Michigan. A major current focus is the history of mineral collections and the collectors who assembled them. Today Chris is presenting a mini-lecture on one of these collection/collector pairs. We welcome Chris Stefano to his debut at the RMS speakers' podium.

11:30-1:30 Lunch and Shopping Break

Saturday Afternoon, April 25, 2015

PM 1:30-2:30 **Into the Andes: Quiruvilca, Peru – Ray McDougall**
Raymond McDougall was born in Montreal, grew up in Toronto, and studied mineralogy and geology while completing a bachelor's degree at McGill University in 1992. He went on to become a corporate/securities lawyer in Toronto for 18 years, where he was a partner of the firm, Stikeman, Elliott LLP, working with clients in the Canadian mining industry. Ray was internationally known as an expert relating to Canadian mineral disclosure laws. He retired from law in 2013 to become a full-time mineral dealer.

Ray has been an avid mineral collector since childhood and has enjoyed field collecting across Canada and around the world. Now living in the woods near Bancroft, Ontario, he travels internationally in pursuit of fine mineral specimens and spends a lot of time in a dark room taking mineral photographs.

Today he will discuss the setting, mining, and minerals of the famous occurrence at Quiruvilca, Peru. We warmly welcome Ray McDougall for his debut at the RMS speakers' podium.

2:30 Coffee Break

2:45-3:45 **The Royal Ontario Museum, 100 years and Counting: The Addition of the Kirwin Collection and Collection Storage Renovations - Dr. Kim Tait**
Dr. Kim Tait is the Teck Chair of Mineralogy at the Royal Ontario Museum (ROM) and an Associate Professor of earth sciences at the University of Toronto. She earned a bachelor's and a master's degree at the University of Manitoba and a doctoral degree from the University of Arizona. Since joining the ROM in 2007, she has taken leadership roles in opening the Vale Mineral Gallery, the Canadian Mining Hall of Fame, and Light and Stone: The Gem Collection of Michael Scott in 2008; the Gem and Gold Gallery and the Nature of Diamonds in 2009; and Water: The Exhibition in 2011. In 2014 the ROM opened the Barrick Gallery of Responsible Mining.

Meanwhile, Dr. Tait maintains a vibrant research group with several undergraduate and graduate students and a postdoctoral fellow working on various topics, many related to phosphate mineralogy.

Today, Kim Tait is going to talk about her newest projects, a \$4M renovation of the collection storage spaces, and the addition of a collection of more than 22,000 specimens from Bangkok Thailand. We warmly welcome Kim Tait to her debut at the RMS speakers' podium.

Saturday Evening, April 25, 2015

5:15-6:30 SILENT AUCTION

7:00-8:30 Thirty-Ninth Annual Symposium Auction Dinner – Main Ballroom

8:30 THIRTY-NINTH ANNUAL SYMPOSIUM AUCTION

Sunday Morning, April 26, 2015

AM 9:00-10:00 **SCHOEP: From Fred Flintstone to Bob the Builder – Herwig Pelckmans**
Having provided an overview of Belgian mineralogy and mineralogists, this morning Herwig Pelckmans will focus on one of the most important Belgian mineralogists, Alfred Schoep. When access to the uranium deposits of the former Belgian Congo became possible, Schoep was able to describe many new species from 1921 to 1932. Later, he assumed administrative duties at the University of Ghent. Although this greatly slowed his scientific work, it gave rise to another legacy—the construction of many impressive buildings that are still iconic for the town of Ghent.
We warmly welcome Herwig back to the speakers' podium.

10:00-11:00 **The Malmberget Mine, Lappland, Sweden – Dr. Peter Lyckberg**
In 1973, at the young age of 11, Peter Lyckberg participated in the first field geologist courses at the University of Göteborg and within a few years visited and explored many of the Swedish mines in production for iron, silver, tungsten, zinc, lead, feldspar and also worked at the Swedish Geological Survey with bedrock mapping of Tjörn Island and the Göta Älv Valley as well as soil mapping of Stenungsön by the age of 15. At age 13 he also was consultant for the Swedish Geological Survey regarding 40 ancient deposits of silver, gold, Mn deposits in Dalsland and Värmland countries which he had spent summers locating in the deep forests. Here drilling, mining and publishing later took place based on his original exploration and information. In 1977 and 1981 he published his first reports on pegmatite deposits and had found giant topaz crystals to 80 kg, and large beryl and schorl tourmaline crystals to 3 m long in Sweden. For some years he specialized in rare minerals and REE minerals. He built his own faceting machine and learned to facet self collected gems.

His civil engineering studies at the Chalmers University of Technology included research work at the Yxsjöberg Scheelite-Cu deposit, and extensive studies of the Malmberget Magnetite deposit in northern Sweden, where some unique pockets of gem quality golden calcite were discovered and documented.

This morning Peter Lyckberg will give us a more detailed description of the Malmberget mine. We warmly welcome him back to the speakers' podium.

11:00 End of the Symposium

See you next year for the
43rd RMS:
April 14-17, 2016

Contributed Papers in Specimen Mineralogy

This year submitted abstracts were reviewed by a committee consisting of Dr. Carl Francis, Dr. Marian Lupulescu, Dr. George Robinson, Dr. Sarah Hanson, and Dr. Steve Chamberlain. Eleven abstracts were submitted, accepted and scheduled for platform presentations on Friday afternoon. The accepted abstracts follow.

PHOSPHATE MINERAL PARAGENESIS AT THE SILVER COIN MINE, HUMBOLDT COUNTY, NEVADA.

Adams, P. M., 126 S. Helberta Ave. #2, Redondo Beach, CA 90277.

The Silver Coin Mine was a small silver producer where a diverse assemblage of 133 minerals occurs that includes 34 phosphates, 18 arsenates, 15 sulfates, 11 carbonates and 3 vanadates. An early limited list of minerals is given by Thomssen and Wise (2004). The mine has become known for crystalline turquoise and is the type or cotype locality for zinclipscombite, meurigite-Na, iangreyite, krasnoite, fluorowardite and ferribushmakinite.

At the mine, small Cretaceous igneous bodies intrude black cherts and shales of the Ordovician Vinini Formation. The intrusives are highly altered consisting of primary quartz with sericite, kaolinite, alunite and jarosite. They have a spotted appearance and are white to light yellow or tan in color. Milky quartz veins containing sulfides are associated with the intrusive and are emplaced into the black cherts and shales, which also contain thin fluorapatite beds. These beds are the phosphate source for the later stage phosphate minerals. These have been recrystallized in the vicinity of the intrusive, have changed color to light gray (quartzite) and white (fluorapatite) and often show micro faulting to brecciation. The sulfides reacted with vadose water to produce sulfuric acid which leached phosphate from the fluorapatite beds. The diverse secondary phosphates then precipitated along fractures in the milky quartz veins and host rocks. The phosphate assemblage is unusual in that many of the minerals are normally found as alteration products of primary phosphate bodies in granitic pegmatites. The main specimen producing areas are the phosphate, copper, arsenate and silver stopes, named for their predominant mineralogies. These are covered by about 1000' of workings accessed by two gentle dipping declines.

In the phosphate stope one area of arsenate mineralogy transitions to later phosphate deposition following the progression: mawbyite → duftite → zincian-olivenite (mimetite) → fluorapatite, fluorite → wavellite. In the main portion of the phosphate stope a simplified sequence of mineral paragenesis is summarized by: barite → smithsonite? (replaced by goethite) → lipscombite, kidwellite → plumbogummite group, meurigite-Na, fluorapatite, fluorowardite, leucophosphate, turquoise, variscite-strengite, wavellite. Members of the plumbogummite group include plumbogummite, crandallite, gorceixite and the related minerals iangreyite, krasnoite and perhamite.

In the copper stope, arsenates occur in the order: mawbyite → duftite → mimetite, cuprian-adamite. A carbonate assemblage consists of: hemimorphite, rosasite → cerussite, chlorargyrite, fluorite → malachite. The copper stope also has a limited phosphate assemblage: lipscombite, kidwellite → variscite, wavellite.

In the arsenate stope, phosphate mineralization occurs in the order: barite → plumbogummite → lipscombite, kidwellite → variscite, leucophosphate → montgomeryite, fluorapatite → "kaolinite". Another area of phosphate mineralization consists of kidwellite, variscite → wavellite.

The silver stope contains: barite → duftite → rosasite → aragonite → fluorapatite.

In the Silver Coin mine, minerals are commonly zoned or show a wide range in compositions, and a large number of species may occur on a single specimen indicating that equilibrium was changing over time and was very localized. In general terms, when they occur together, arsenates appear to predate phosphates – which are typically fluorapatite +/- wavellite. In more complex phosphate assemblages the iron phosphates occurred first followed by aluminum phosphates, with wavellite often being the last phosphate to form. The fluorine content in some of the later minerals is relatively high. Three new fluorine containing species have been recognized (iangreyite, krasnoite and fluorowardite).

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Thomssen, R. and W. Wise. 2004. Species list: Silver Coin mine, Iron Point district, Edna Mountains, Humboldt Co., Nevada, USA., *International Micromounters Journal*, **13**:7-8.

CERIANITE-(Ce) FROM THE WAUSAU COMPLEX, MARATHON COUNTY, WI.

Buchholz, T. W.¹, A. U. Falster², and W. B. Simmons². ¹1140 12th Street North, Wisconsin Rapids, Wisconsin 54494; ²Maine Mineral and Gem Museum, PO Box 500, 99 Main Street, Bethel, Maine 04217.

The Wausau Syenite Complex (WSC) is composed of four plutons, from the oldest and most alkalic Stettin Pluton (1565 Ma +3-5), through the younger and progressively less alkalic and more silicic Wausau (1522+-6Ma) and Rib Mountain plutons, to the youngest, most silicic Nine Mile Pluton (1505.9 ± 2.7 Ma).

Cerianite-(Ce), CeO₂, is a very rare mineral, typically formed in weathering environments where it is derived from the alteration of primary LREE minerals under oxidizing conditions. In this case Ce³⁺ has oxidized to the much less soluble Ce⁴⁺.

Cerianite-(Ce) was first identified as a late phase in material from the relatively REE-poor Woodland Drive pegmatite (Buchholz et al. 2012). Cerianite-(Ce) occurs in a late-stage smectite-group clay associated with ilmenite, brookite, hematite, columbite-Fe, zircon and pyrochlore. The core zone of the pegmatite shows abundant evidence of late-stage alkalic metasomatism in which Zr, Hf, Nb, Ta, Ti, Sn were remobilized and redeposited. The presence of hematite suggests that the metasomatic fluids were oxidizing leading to the formation of Ce⁴⁺. Any REE³⁺ that may have been present were mobilized. EMP analysis of the cerianite revealed the presence of 2-5 wt. % ThO₂, with ThO₂ substituting for CeO₂.

Recently, cerianite-(Ce) was also identified from the Ridge Granite quarry in the SW portion of the Nine Mile Pluton. Leucocratic miarolitic granite is exposed in the central portion of the quarry, and cerianite-(Ce) is intergrown with clusters of platy hematite in small miaroles, associated with quartz, K-spar, albite, a granular appearing LREE-phosphate phase (likely rhabdophane-(Ce)), minor zircon, and clay minerals. Evidence of large-scale, late-stage alteration and/or replacement activity (as seen in the Woodland Drive pegmatite) is lacking.

Guastoni et al. (2009) suggested that decomposition of early-formed primary REE minerals by fluid interactions could mobilize the REE to form other minerals, including cerianite-(Ce) due to increasing *f*O₂. Zaitsev et al. (2011) noted the incorporation of REE³⁺ in cerianite-(Ce) from the Kerimasi volcano in northern Tanzania. Chemically, cerianite-(Ce) from the Ridge Granite site does not have many substitutions and without appreciable incorporation of LREE³⁺.

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(REE) carbonates from alkaline pegmatites of Mount Malosa, Malawi. *American Mineralogist* 94:1216-22.

Zaitsev, A.N., Chakhmouradian, A.R., Siidra, O.I., Spratt, J., Williams, C.T., Stanley, C.J., Petrov, S.V., Britvin, S.N., Polyakova, E.A. 2011. Fluorine-, yttrium- and lanthanide-rich cerianite-(Ce) from carbonatitic rocks of the Kerimasi volcano and surrounding explosion craters, Gregory Rift, northern Tanzania. *Mineralogical Magazine* 75: 2813-22.

A POTENTIAL NEW TANTALUM DISTRICT IN THE UPPER MIDWEST?

Falster, A. U.¹, W. B. SIMMONS¹ and Buchholz, T. W.². ¹Maine Mineral and Gem Museum, PO Box 500, 99 Main Street, Bethel, Maine 04217; ²1140 12th Street North, Wisconsin Rapids, Wisconsin 54494.

Ongoing research reveals that the majority of pegmatite populations exposed in the states of Wisconsin, Michigan and Minnesota, contain a characteristic tantalum-signature. Pegmatites investigated include the Wausau syenite complex (WSC) in Marathon Co., Wisconsin; pegmatites of the associated Wolf River batholith (WRB), Waupaca Co., Wisconsin; pegmatites near Waterloo, Jefferson Co., Wisconsin (WP); pegmatites in Fern Township, Florence Co., Wisconsin (FP); pegmatites in Dickinson and Marquette Cos., Michigan (DMP) and pegmatites around Orr, Saint Louis Co., Minnesota (OP).

Both NYF (Niobium-Yttrium-Fluorine) and LCT (Lithium-Cesium-Tantalum) type affiliations in the Upper Midwest show Ta and Mn enrichments. The WSC and the associated WRB host clearly NYF-type pegmatites whereas the FP and WP show strong indications for the LCT-types. The cases for the OP and the DMP are less clear but the trend is comparable to the other locations and further work is pending. The OP is of Archaean age and the DMP and all the other pegmatite locations in this study are Proterozoic in age. Thus, the tectonic affiliation of the OP is likely different than those of the remainder of the pegmatites

Generally, NYF-type pegmatites contain low Ta- and Mn-concentrations, but these pegmatites all contain unusual late-stage enrichments of Ta and Mn. Even though the bulk of the columbite-tantalite species identified are columbite-(Fe) and columbite-(Mn), a late-stage increase of Ta and Mn is definitely present. In the pegmatites of LCT-type affiliation, the Ta- and Mn-content are very high even in the less evolved zones.

Accessory minerals differ widely from each location. Some of the more common accessory species are listed below.

WSC: abundant REE minerals such as bastnaesite-, monazite-, xenotime- and euxenite-group species, occur in the most evolved, late-stage assemblages. Phenakite and bertrandite are common locally.

WRB: beryl, gadolinite-(Y), monazite-group species.

WP: gahnite, Bi-mineralization, spessartine.

FP: fluorapatite, beryl, phosphates, tourmaline, cassiterite.

DMP: monazite-and xenotime-group species, zircon.

OP: monazite group species, zircon.

We suggest that the basement source rocks in the Upper Midwest, which are part of the Canadian Shield, contain elevated Ta and thus imparts that signature to any pegmatites formed by partial melting of this source rock. Higher degree of fractionation for Ta and Mn as exhibited by the LCT affiliation will push the limits to near end-member composition in those pegmatites but even in those pegmatites with an NYF signature, a small portion of very late stage activity can bring about essentially near end-member compositions in columbite group minerals as well.

THE GARNET LINE IN OXFORD COUNTY, MAINE, PEGMATITES.

Felch, M. M., W. B. Simmons, A. U. Falster, and K. L. Webber. Maine Mineral and Gem Museum, PO Box 500, 99 Main Street, Bethel, Maine 04217.

The 'garnet line' is a primary fabric occurring within the intermediate and core zones in many of the Oxford County, Maine pegmatites. This study primarily focuses on the textural and chemical characteristics of the two best-known garnet line examples from Maine: Mt. Mica and western Mt. Apatite pegmatites. These two pegmatites have both produced gem quality tourmaline and many other world class specimens (Simmons *et al.* 2006, Francis 1985) for nearly two centuries. The garnet line plays an important role in mining these two localities as it is a zonation indicator used to locate the lower limit of miarolitic cavities in these pegmatites.

Garnet compositions fall within the almandine (Alm) -spessartine (Sps) series. Garnets from the garnet line at Mt. Mica show the greatest range 66.07-38.12% Sps., whereas garnets from the garnet line in Mt. Apatite are between 30.98-27.03% Sps. Garnets from both garnet lines host a range of primary inclusions; quartz, mica, tourmaline, zircon, as well as xenotime-(Y), monazite-(Ce) and pollucite, which were not previously known to occur within the garnet line. Garnets from the garnet line in Mt. Mica are typically rimmed with dark blue tourmaline-(elbaite), which is a distinctive texture for this location. Photomicrographs and backscattered imaging show that the rims appear to be a reaction zone developed from a reaction of late-stage fluids with the primary garnet and neighboring mineral phases, e.g. albite and quartz. A similar occurrence of tourmaline-rimmed garnet was recently reported from a pegmatite in the Sahatany Valley, Madagascar (Buřival and Novák, 2014).

The occurrence of pollucite within the garnet is very unusual, as pollucite is typically found in the most evolved interior zones in pegmatites. The pollucite in the Mt. Mica garnet line is found filling fractures within garnets and is unusually enriched in iron. Electron microprobe analyses revealed an exceptionally high iron content of up to 5.69 wt% FeO in these pollucite veins, which is higher than any known naturally occurring pollucite [(Cs,Na)₂(Al₂Si₄O₁₂)·2H₂O].

Unidirectional solidification from an undercooled boundary layer of the melt is the proposed mechanism for producing the garnet layer in these Maine pegmatites, similar to the model proposed for the San Diego Co. pegmatites (Webber *et al.*, 1997, 1999). The garnet line at Mt. Mica was subjected to late-stage fluids which reacted and metasomatized preexisting mineral phases.

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NEW OCCURRENCE OF LUDWIGITE FROM POTRERO CHICO, NUEVO LEON, MEXICO.

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Potrero Chico, a well-known rock climbing area in Hidalgo, Nuevo Leon, Mexico, is host to nearly vertical exposures of locally dolomitized, Mg-bearing limestone. These strata were uplifted during diapiric rise of evaporites of the Jurassic Minas Viejas Formation. Ludwigite $[(Mg_2Fe^{3+}(BO_3)O_2)]$ was recently recovered from several of the gypsum samples. It occurs as lustrous, black, fibrous crystals that reach up to 1 cm in length. The ludwigite exhibits a nearly end-member composition with little Fe^{2+} substitution (vosneite component) for Mg.

Also present in the evaporite deposits are abundant small quartz crystals up to 1 cm, most of which contain numerous inclusions of lustrous hematite. Hematite also occurs within the gypsum as millimeter-sized, lustrous, black crystals. Braunite $[Mn^{2+}Mn_6^{3+}(SiO_4)O_8]$ occurs locally abundant as steel-gray, lustrous tetragonal dipyramids up to 2 mm. There is little substitution of Fe^{3+} for Mn^{3+} , thus the braunite is nearly end-member in composition. In the surrounding limestone are albite crystals, adularia and pumpellyite-(Mg). The black adularia crystals reach up to 5 mm in maximum dimension. Pumpellyite-(Mg) $[(Ca_2MgAl_2(Si_2O_7)(SiO_4)(OH)_2 \cdot H_2O)]$ lies compositionally near the Mg-rich endmember and occurs as either gray to greenish gray prismatic crystals up to 1 cm in length or as unusual round aggregations that exhibit a shell-like orientation, perhaps the result of secondary replacement. The origin of the associated authigenic silicate mineral suite may be attributed to increased heat transfer through the salt structures and associated metasomatism of adjacent sediments by brines derived from the evaporite sequence. It is likely that the mineral assemblage hosted by the gypsum formed under similar conditions. Minerals related to the evaporite deposits generally contain either Fe^{3+} or Mn^{3+} suggesting that they were deposited under oxidizing conditions.

GARNETS IN THE HENRYTON PEGMATITE, CARROLL COUNTY, MARYLAND.

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The Henryton pegmatite, located in Howard, Carroll and Baltimore counties, Maryland has been described as the largest and most accessible pegmatite in the state. It is mapped as a single body approximately 5 km long and approximately 0.25 km at its maximum width. Mined for feldspar in the early 1900's, the Henryton pegmatite also contains muscovite, beryl and garnet with accessory zircon and apatite. The pegmatite is exposed in several quarries and as large mounds within the Patapsco Valley State Park.

Garnet crystals, up to 1 cm, occur in the fine grained portions of the pegmatite (aplite). Garnets occur as randomly distributed grains, in clusters or in layers but always in the aplite. The aplite often surrounds decimeter-sized feldspar crystals and fills in space between equally large muscovite plates. Garnets are also occasionally found on the cleavage surfaces of large, pegmatitic feldspar and muscovite. Crystals are commonly subhedral to euhedral, forming red to orange trapezohedrons and dodecahedrons.

Garnets collected throughout the pegmatite have been analyzed by EDS to determine if there is any variation in the garnet chemistry, and if so, whether these differences are related spatially. Garnets range from Mn-rich almandine to Fe-rich spessartine with Mn/(Mn+Fe+Ca+Mg) from 0.33 – 0.70. Even within individual pegmatite exposures, garnet chemistry may vary from almandine to spessartine.

MINERALOGIC STUDY OF MICRO-MINERALS IN MIAROLITIC CAVITIES IN ALKALI DIKES, AUGUSTA COUNTY, VIRGINIA.

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Rockingham, Augusta and Highland counties Virginia, are host to the youngest igneous rocks east of the Mississippi River. This suite of intrusive igneous rocks dates from late Jurassic (~140 ma) to mid-Eocene (~ 48 ma). They intrude folded, lower Paleozoic carbonates and clastics of the Valley and Ridge Province. The exact tectonic explanation for why these igneous rocks occur at this location and time is still unknown. There are three major igneous lithologies represented in the study area.

Mole Hill (Rockingham Co., VA. - Eocene) is a volcanic plug composed of olivine-spinel basalt. It is a fine, even textured basalt with phenocrysts of pyroxene, olivine and spinel, as well as the occasional sandstone xenolith. **Trimble Knob** (Highland County, Virginia – Eocene) is a basalt breccia (diatreme) and is the youngest igneous rock east of the Mississippi River (~ 48 ma). In Augusta County, Virginia at least 41, northwest to southeast trending, **syenite dikes** have been mapped. These are late Jurassic to early Cretaceous in age (~140 ma to ~150 ma). Unusual minerals found in small miarolitic cavities of the syenite dikes are the focus of this study. The dike rock is mostly a hornblende-biotite-nepheline syenite, where late stage elements (Nb, Ti, Ba/Sr, F, and REE) have concentrated in sodium saturated fluids within the small cavities. Mineral assemblage/chemistry found is reminiscent of the syenite at Mont Saint-Hilaire, and Demix-Varennes Quarry, Quebec, Canada.

The mineral images and analyses reported in this study are of specimens found in large alluvial and colluvial blocks up to two and a half meters, by one meter, by a half meter thick, found along a two mile length of Stoutameyer Branch, Augusta County, Virginia. The largest syenite block observed is located approximately 200 meters above the downstream end of the study area, and is thought to be very near the source dike. The mineralogy of this area has not previously been investigated. Represented are members of the Labuntsovite Supergroup [labuntsovite $\text{Na}_4\text{K}_4(\text{Mn,Fe,Mg})_2(\text{Ti}_8\text{O}_4)(\text{Si}_4\text{O}_{12})(\text{OH})_4 \cdot 10-12 \text{H}_2\text{O}$, nenadkevichite ($\text{Na}_3(\text{Nb, Ti})_2[\text{Si}_4\text{O}_{12}](\text{O,OH})_2 \cdot 4\text{H}_2\text{O}$), korobitsynite ($\text{Na}_3(\text{Ti, Nb})_2[\text{Si}_4\text{O}_{12}](\text{OH, O})_2 \cdot 3-4 \text{H}_2\text{O}$)], and a host of other rare minerals and unknowns.

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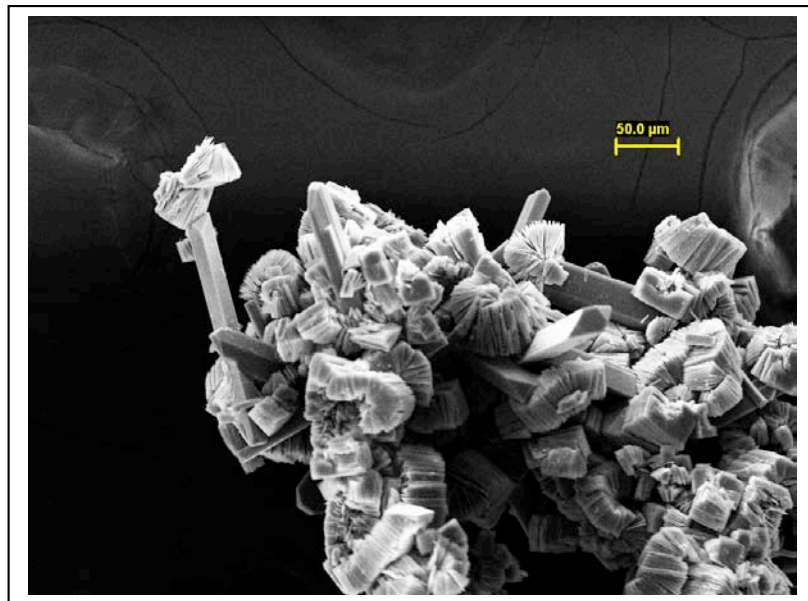


Figure 1. Prismatic crystals of nenadkevichite (?) and platy rosettes of unknown. Possibly an Fe-Mn-clay mineral (?). SEM SE Image.

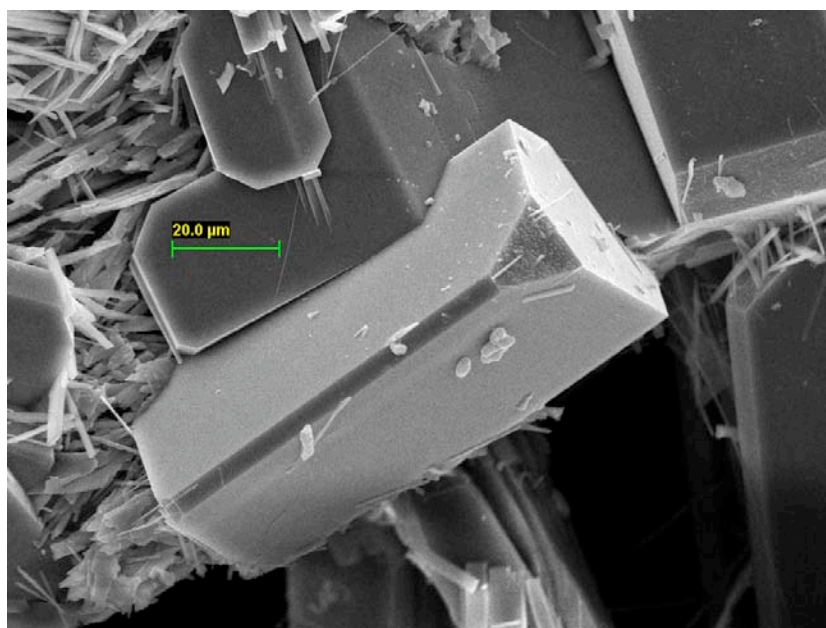


Figure 2. Orthorhombic crystal with chemistry matching labuntsovite supergroup species. [korobitsynite (?) - nenadkevichite ?] (?) SEM SE Image.

TRACE ELEMENTS IN BOROSILICATES FROM SOME NEW YORK PEGMATITES BY LA-ICP-MS.

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Tourmaline and dumortierite are the two most common borosilicates in pegmatites. New York pegmatites cutting the Grenville-age metamorphic rocks of the Adirondack Mountains and Fordham gneiss (Bedford) and Taconic-age rocks of the Manhattan Schist were sampled for LA-ICP-MS analysis of trace elements in these two minerals.

Schorl is the dominant tourmaline species in the Adirondack and Bedford pegmatites. A sample from the Kinkel Quarry in Bedford, NY has foitite formed in cavities or as an extension of the schorl crystals. Trace element abundances are similar in all the schorl samples investigated. The REEs (LREE>HREE), Ba, Y, Nb, Ta, Zr, Ag, Cd, Sb, Hf, Bi and the actinides are low. Some schorls display color zonation in plane polarized light from a blue core to a brown rim. The rim is enriched in Li, Be, Sc, V, Cr, Ge, Sr, Y, and Sn while the core contains more Zn and Hg. In addition, the rim is also enriched in REEs compared to the core. The schorl from Bedford contains more Li, Be, V, Zn, Ga, Ge, Sr, LREEs, and Pb than associated foitite, while Co, Ni, Zn, Zr, In, Cd, and Sb are of similar concentration, and the HREEs were not detected in either tourmaline species.

Dumortierite is an important mineral of the abyssal class of pegmatites. It is considered a source of Nb required to form columbite in many pegmatites and has variable substitutions of Fe, Mg, and Ti for Al, and P for Si. Dumortierite from Benson Mines, NY shows the highest amount of Fe, Mg, As, and Sb. The trace element composition suggests that the solid solution between dumortierite and the possible isostructural holtite is not significant, some samples showing only low to moderate amount of regular minor components such as As (0.7 - 2362 ppm), Sb (0.21 - 4070 ppm), Nb (9 - 209 ppm), and Ta (0.4 - 2873 ppm). Dumortierite from pegmatites intruding the Manhattan Schist shows the highest content of Nb and Ta. Ti and Mn are low and vary from 8 to 224 and 28 to 669 ppm, respectively. Bi has also low content of 2 to 132 ppm. Additional data is forthcoming.

THE COLLECTION AND CATALOGING OF JOHN H. MARSHALL (1931-2008).

Poulin, B. 25 Summit Street, East Hampton, CT 06424.

John H. Marshall was born in Massachusetts in 1931. He grew up in Newton, Mass until WWII, when his father went overseas to serve his country. John was sent to St. Mark's School a preparatory all-boys school in Southborough, Mass. John had a great interest in nature and the outdoors as a young man and throughout his life. He became great friends with Bart Jacob of New Bedford, NY. When John was about thirteen he went to New Bedford for summer break to stay with Bart's family; this is where he found his love for collecting minerals. The two needed something to do one hot day, so they decided to go swimming at one of the local quarries. That's when John found his first mineral specimen, a nice piece of rose quartz. John kept this specimen throughout his long collecting career (more than sixty years) and this specimen became his catalog #1 piece. This rose quartz became just one of more than 4,000 minerals in his diverse collection.

John developed a great interest in collecting from this time on. John would start reading about some of the local quarries and would visit many in Massachusetts on his bicycle, even riding all the way to Strickland Quarry in Portland, Conn. (over 50 miles way).

After graduating St. Mark's, John wanted to do something with minerals; so he went to South Dakota to work the summer at the Homestake Mine. He also applied to Harvard University and was accepted to the Geology Department. While studying at Harvard he would work the summers at some of the mines in the Butte, Montana area.

After graduating with a Bachelor's Degree in 1954, John enlisted in the army and was stationed in Europe. Among other places he visited England and would return there many times throughout his life. He attended the Colorado School of Mines after the service, however felt it would take too long to earn an advanced degree and decided to move back East to Philadelphia. He enjoyed long walks and found the mine dumps near the Brookdale Mine in Phoenixville. He found a good quality pyromorphite specimen in one of these dumps; which developed into a lifelong effort to acquire a pyromorphite specimen from every locality in the world.

At some point, John took an interest in the Lichner Collection. The collection was formed by father and son, Moritz and Adolf Lichner in the late 1800s to the early 1900s. John chose to collect pieces of a general size between 4x6 cm and 8x10 cm, which was the size of the specimens in the Lichner Collection.

John cataloged his collection with 3x5 inch preprinted cards – modeled after John Sinkankas's catalog cards. Each card was filled out by hand with great care and neatness; and kept in glassine envelopes. Nearly every specimen has attached to it very small hand written labels with his initials, catalog number, and specimen information. These specimen labels are usually a quarter inch or smaller, he took great care to make sure they were all precise and easy to read. He had wonderful handwriting. On some early and difficult surfaces he used paint, however mostly he used card stock to make the specimen labels. The information on the 3x5 inch catalog cards included the species, variety, associations, catalog number, size, and locality remarks such as when and where it was collected or purchased. John also kept all previous labels from other collectors, along with creating his own handwritten labels.



Figure 1: Fluorapatite from the Harvard Mine, Greenwood, Maine with inset showing the Marshall labels on the specimen.

COLLECTION OF J.H. MARSHALL, JR.		
SPECIES:	APATITE	CAT. NO.: 925
VARIETY:	Xls (approx 25 lilac color)	SIZE: 105x75x35 mm.
ASSOCIATIONS:	Quartz xls., minor tourmaline	
LOCALITY:	Harvard Mine, Greenwood, Maine	
REMARKS:	Found in the tailings below the mine. The piece was originally 3x in size, and sat as a rather drab piece, with a somewhat hidden pocket for 30 years. I finally whacked it w/ the 3 pounder, and it could not have broken any better.	
ACQUIRED:	Collected	DATE: May '60
		COST: —

Figure 2: Catalog card for the fluorapatite shown in Figure 1.

MINERALOGY OF A NEW PEGMATITE NEAR WELLINGTON LAKE, IN RELATION TO THE SOUTH PLATTE PEGMATITE DISTRICT, COLORADO (USA) CONTAINING CHEMICALLY ZONED FLUOCERITE-BASTNÄSITE CRYSTALS.

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Numerous pegmatites in the South Platte district, CO, at the northern end of the 1.08 Ga ‘A Type’ (anorogenic) Pikes Peak Batholith, are known for their unusual rare earth element (REE) enrichment (Simmons 1980; Simmons et al. 1987). These pegmatites are a globally significant example of the Nb-Y-F (NYF) type. The northern and central part of the South Platte District contains large, well-zoned heavy REE-rich pegmatites, whereas the southern and western pegmatites of the district are generally light REE-dominant and can be variable in size (<1 m to >15m diameter). The South Platte pegmatites are thought to result from a late-stage, volatile-rich mobile magma in the mesozone of the Pikes Peak batholiths (Haynes 1965). We present a petrographic and mineralogical analysis of a yet undescribed REE pegmatite near Wellington Lake, situated on the western periphery of the South Platte district (Fig. 1).

The Wellington Lake pegmatite is a steeply dipping, lenticular body hosted in coarse to medium-grained pink syenogranite of the Pikes Peak Batholith, and measures ~5 by ~3 meters as exposed in cross section. In contrast to the McGuire pegmatite, a nearby (< 2 km) large NYF pegmatite enriched in F, Ti, Nb, and containing monazite, the Wellington Lake pegmatite is smaller and poor in F, Ti, and P. The Wellington Lake pegmatite also contains a quartz core with large, open cavities hosting euhedral

multi-generation quartz crystals to >50 cm in size. Major constituents of the Wellington Lake pegmatite are quartz, microcline-perthite, ‘cleavelandite’ albite, Fe-oxides, and biotite. Accessory minerals include fluocerite, bastnäsite, columbite, ‘cyrtolite’ zircon, and minor U/Th species. Most notable are well-developed tabular crystals of fluocerite [(Ce,La)F₃] which are epitaxially overgrown by bastnäsite [(Ce,La)[CO₃]F], and occur in a matrix of Fe-oxides boxwork associated with quartz crystals. The relative crystallographic

orientation of the bastnäsite on fluocerite was determined using Raman optical crystallography.

Electron microprobe analyses (Table 1) show that the bastnäsite with an empirical formula, La_{0.20}Ce_{0.44}Pr_{0.05}Nd_{0.21}Sm_{0.04}Gd_{0.03}HREE_{0.02})CO₃F, is generally depleted in light REE and enriched in medium REE compared to the fluocerite, (La_{0.26}Ce_{0.49}Pr_{0.04}Nd_{0.15}Sm_{0.02}Gd_{0.01}HREE_{0.01})F₃. The bastnäsite overgrowth is zoned with respect to REE and exhibits linear bands of enrichment in Nd, Sm, Gd, and Y perpendicular to the c-axis (Fig. 2).

The alignment of the respective c-axes [0001] and the extended planar fluocerite/bastnäsite interface is indicative of epitaxial growth as identified in related work by Müller et al. 2011. The transition of fluocerite to bastnäsite growth suggests an increase in pH and/or decrease in F-/CO₃ activity ratio (William-Jones 1992). The REE zonation seen in the bastnäsite may involve selective complexation of certain REE with CO₃. Many of the euhedral smoky quartz crystals exhibit strong dissolution-precipitation growth features and abundant 2-phase (liquid and vapor) inclusions suggesting a hydrothermal fluid may have been associated with this pegmatite. This fluid may have also affected the growth and REE zonation of the fluocerite/bastnäsite crystals, which appear to be paragenetically late. The Wellington Lake pegmatite shows aspects of miarolitic as well as large zoned NYF-type pegmatites and is an interesting study object within the Pikes Peak Batholith. Future work will focus on fluid inclusions studies in the different generations of quartz and in bastnäsite, investigation of the age relationship of the pegmatite with respect to the host granite, and identification of hydrothermal characteristics in the REE mineral paragenesis.

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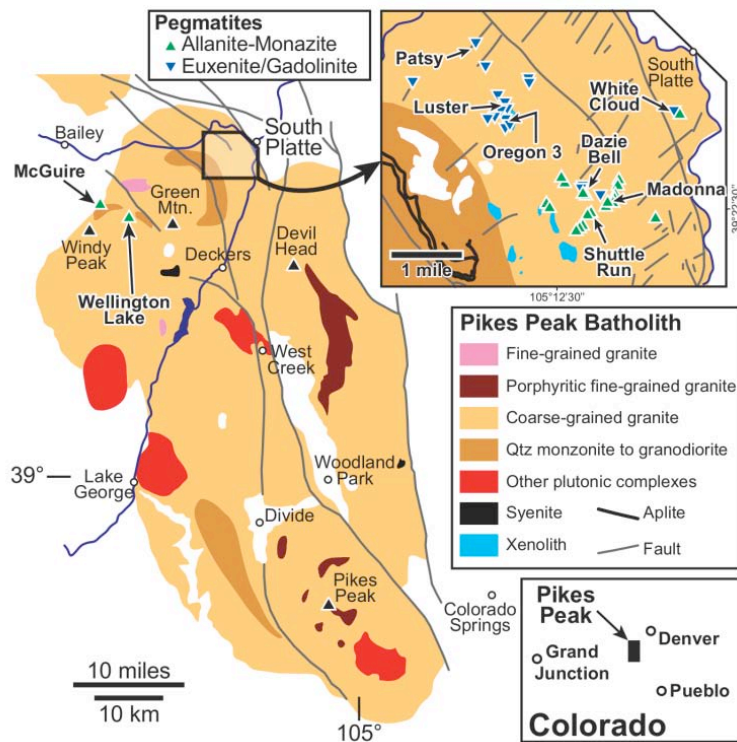


Figure 1: Location of Wellington Lake pegmatite relative to the South Platte pegmatite district (upper right; modified from Smith et al. 1999).

Oxide	Fluocerite	Bastnäsité
Ce ₂ O ₃	41.81	31.78
La ₂ O ₃	21.67	14.38
Nd ₂ O ₃	13.08	15.64
Pr ₂ O ₃	3.79	3.59
Sm ₂ O ₃	1.83	3.39
Gd ₂ O ₃	0.80	1.99
Y ₂ O ₃	0.48	0.53
Dy ₂ O ₃	0.19	0.34
Tb ₂ O ₃	0.09	0.13
ThO ₂	0.77	0.15
F	32.31	8.43
O=F	-13.60	-3.55
CO ₂	-	19.34
Total	103.22	96.14

Table 1: WDS microprobe data on fluocerite/bastnäsité composition.

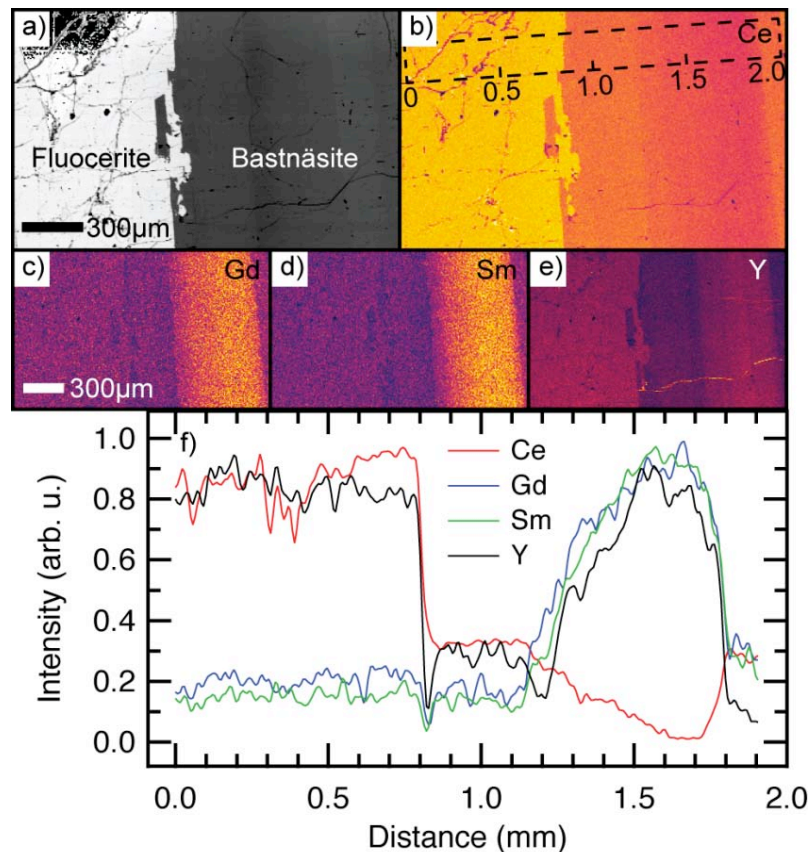


Figure 2: (a) Backscattered electron image of fluocerite-bastnasite interface in zoned crystal from Wellington Lake pegmatite. (b-e) Microprobe X-ray element maps near the interface for (b) Ce, (c) Gd, (d) Sm and (e) Y. (f) shows X-ray intensity (arbitrary units) from microprobe X-ray maps of the same REE variation across area scaled in (b).

RARE HEMATITE TWINS ON {012} FROM THE KALAHARI MANGANESE FIELD, SOUTH AFRICA.

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Over the past several years, occasional twins of hematite from N'Chwaning #2 Mine have been available from a few dealers. These have generally not been recognized for what they are. They are usually small almond-shaped contact twins located among untwinned crystals. Literature research, web searches, and consultations with South African experts on the Kalahari Manganese Field suggests that these twins have probably come from only two pockets, one encountered around 2004 and the other perhaps about 2010. The habits of crystals from the two pockets differ in morphology, with the more recent pocket producing the more complex crystals illustrated here. Crystal morphology and the twinning relationship were established using two-circle optical goniometry to examine both twinned and untwinned crystals.

Because the structural cell for hematite has a c:a ratio twice that of the morphological cell, it is necessary to double the last index in any Miller indices from the older literature (including most textbooks still in use), and to switch the first two indices. Thus {hkl} in the old system becomes {k h 2l} in the new one. The twins we refer to as {012} need to be searched for in the literature using the

indices $\{101\}$. The Dana textbooks indicate that $\{101\}$ twins are generally lamellar, and do not mention examples of well-formed, euhedral contact twins. The Goldschmidt Atlas illustrates $\{101\}$ contact twins from only a few localities, now mostly extinct and none in Africa. Clearly these are rare twins indeed.

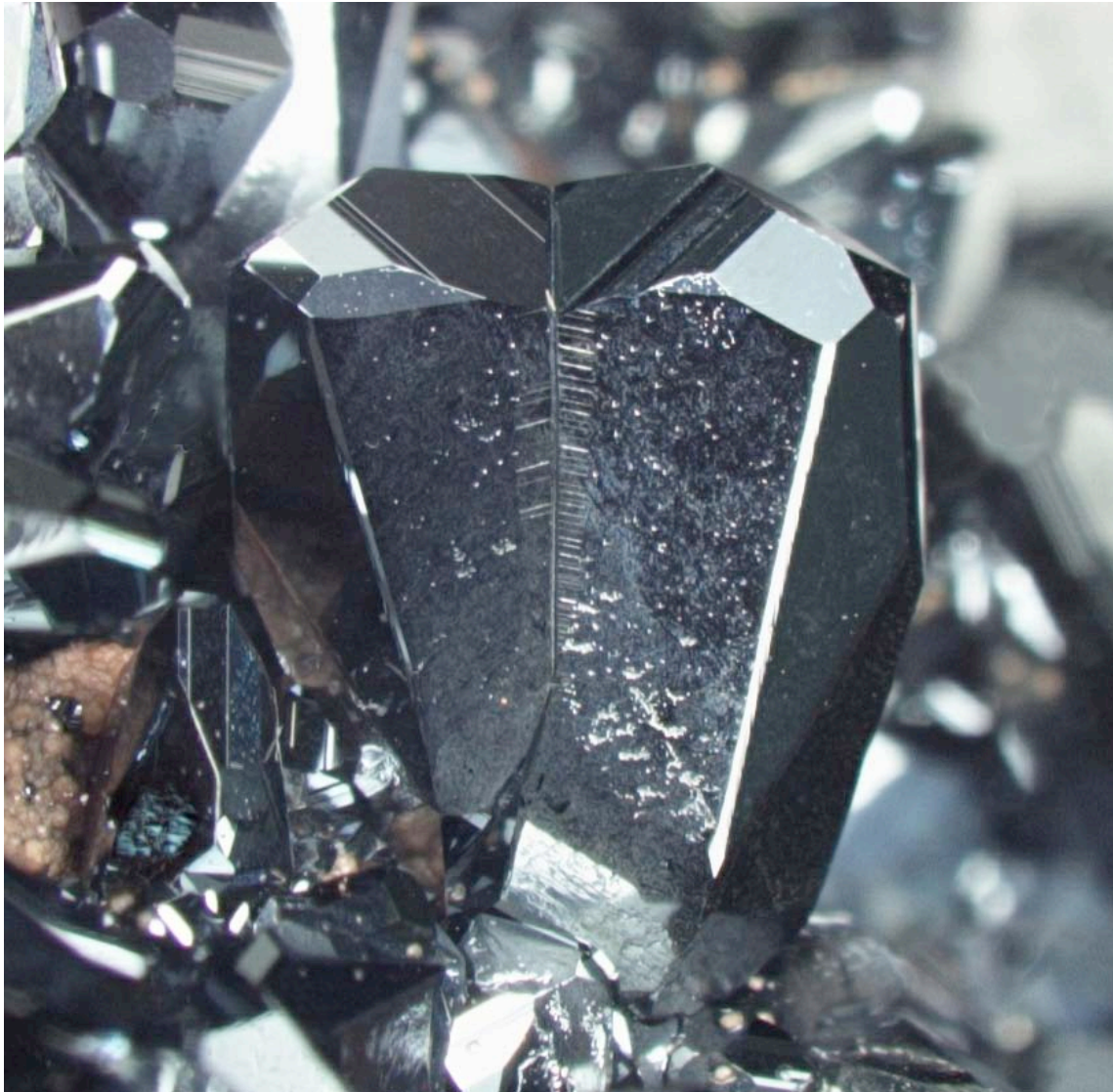
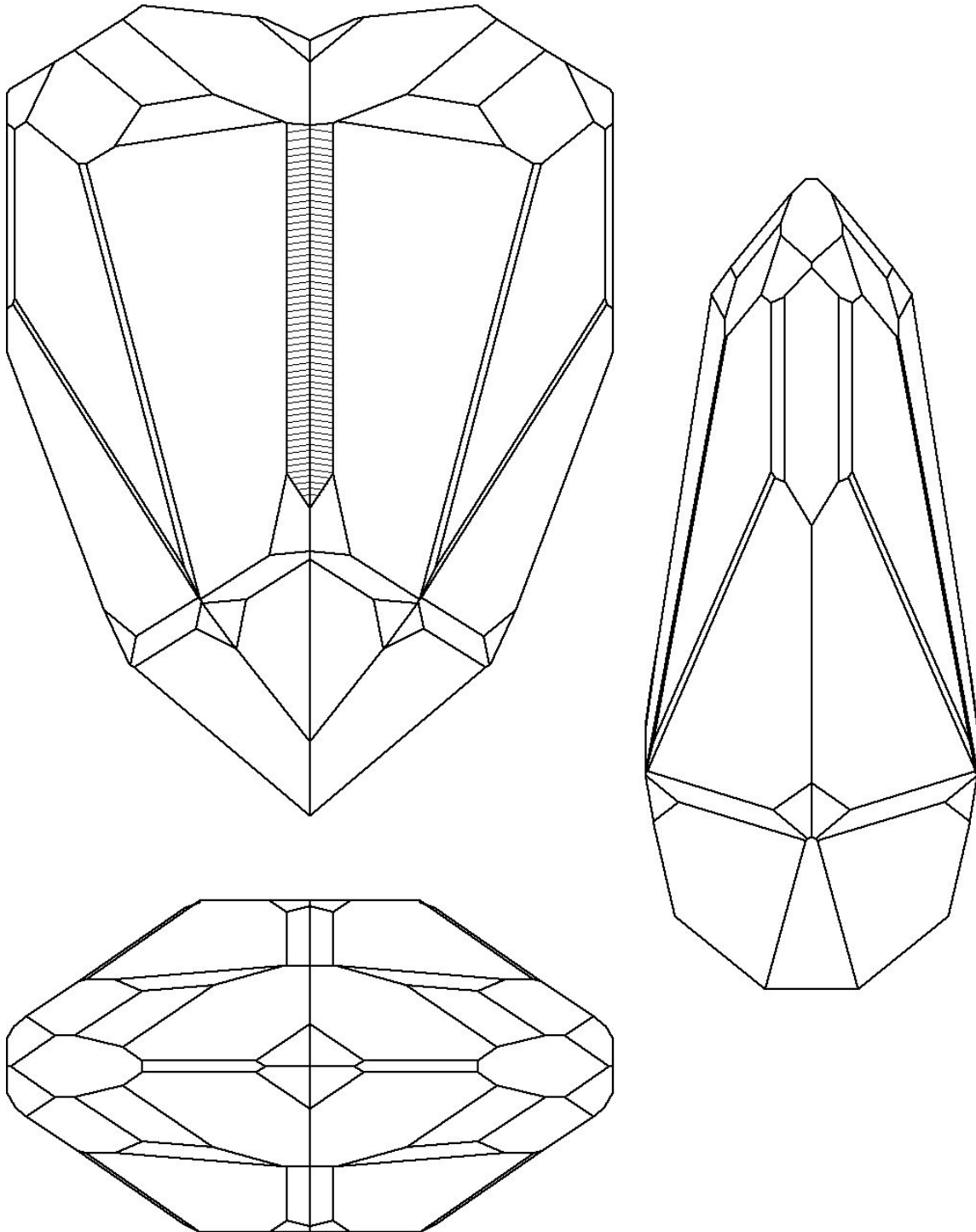


Figure 1. Hematite twin on $\{012\}$ from the N'Chwaning #2 mine, Kalahari manganese field, South Africa. The field of view is 7.5 mm wide.

Hematite Twin on {012}
N'Chwaning #2 Mine



Minerals of Belgium

Herwig Pelckmans

Belgium is a very small country located in the heart of Western Europe. Even though its geology does not really favor a wealth of mineral deposits, no less than 260 mineral species have been recorded so far. Eighteen of those have their type locality in Belgium, all the more reason to check them out.

Besides the rare and sometimes ugly, we also have the more common minerals that eventually can be found as “pretties”, even in our country! So we'll have a look at some of those beauties together, while we keep in mind that Belgium is not exactly located in the Alps.

Along the way, we'll get to meet some of our mineralogists, who made important contributions to the science of mineralogy. We'll also talk about the books published on Belgian minerals. And since Belgium is known for a few other things as well, we will mix those in with the rest.

Finally, for those people who hate to come unprepared, there is a very good reference work on the Mineralogy of Belgium, made by the members of the MKA (Mineralogical Society of Antwerp), to commemorate its 50th anniversary in 2013. Originally published in Dutch, it was also translated to English, and is available online for free at: <http://www.minerant.org/mka50.html>

Into the Andes: Quiruvilca, Peru

Raymond McDougall

High in the Andes Mountains in northern Peru, Quiruvilca has produced excellent mineral specimens for many decades. Discovered in the late 18th century and mined on a large commercial scale since 1907, Quiruvilca is one of Peru's oldest and best known polymetallic mines. At various times during its history, this locality has occasionally also been called the "ASARCO Mine", and "La Libertad Mine", but most often it is simply referred to as "Quiruvilca". Today the mine is operated by Southern Peaks Mining LP for copper, silver, zinc and lead.

Among mineralogists and mineral collectors, Quiruvilca is most renowned for world-class specimens of enargite, arsenic and orpiment, the world's finest hutchinsonite crystals and exceptional pyrite and bournonite crystals. Quiruvilca has also produced very fine specimens of realgar, chalcopyrite, scheelite, barite, and many other minerals, including rarities seligmannite and baumhaurite-2a.

The workings at Quiruvilca are comprised of hundreds of tunnels intersecting over 50 separate epithermal veins within an area covering many square kilometres. Today, many small underground teams are working daily, at any given time concurrently producing ore from approximately 60 different working headings within the mining complex.

Although the heyday of mineral specimen production at Quiruvilca is often considered to be long past, the mine continues to produce small numbers of beautiful, excellent specimens, with sporadic larger finds.

This presentation is an overview, with an emphasis on the fine minerals of Quiruvilca, inspired by an adventure into the Andes and into this world-famous mine.



Figure 1. Into the Andes - the road to Quiruvilca. R. McDougall photo.



Figure 2. The Elvira Headframe, overlooking the town of Quiruvilca. R. McDougall photo.



Figure 3. Pyrite, 8 cm, from Quiruvilca. R. McDougall specimen and photo.



Figure 4. Realgar crystals to 1 cm on orpiment from Quiruvilca. R. McDougall specimen and photo.



Figure 5. Enargite with pyrite, 7.5 cm, from Quiruvilca. R. McDougall specimen and photo.



Figure 6. Bournonite crystal group, 1.8 cm, on quartz from Quiruvilca. R. McDougall specimen and photo.

Alfred Schoep Herwig Pelckmans

Alfred Schoep was born in Ghent, one of the major towns of Belgium. He first studied geography at the local university, then mineral sciences, and got a doctors degree in both. After working for a few years at the University of Ghent, he took part in an expedition to Katanga (Democratic Republic of Congo) from 1910 to 1913.

After World War I, Schoep replaced Franz-Friedrich Stöber at the University of Ghent, teaching crystallography and mineralogy. He also taught at other institutions in Ghent and later on even at the *École des Mines* (School of Mines) in Mons. It was his colleague Jules Cornet who sparked his interest in uraniferous minerals. Thanks to the Democratic Republic of Congo opening up, he was able to describe many new mineral species from that country in the following years (1921-1932). Unfortunately, his scientific career was slowed down tremendously when he became administrator-inspector of the University and director of the Technical Schools of Ghent. However, in this new position, and thanks to his many skills, he realized the construction of quite a few impressive buildings, that even today are still iconic for the town of Ghent.

At the end of World War II, Schoep was suspended from office because some people thought he had sympathized with the Germans. Fortunately he was rehabilitated a few years later. Alfred Schoep finally passed away after a long illness in 1966.



Alfred Schoep (1881-1966) © Collection of Portraits, University Library of Ghent, Belgium.

42nd RMS Exhibits

- Barbara Sky** - Thumbnail Pseudomorphs
- Bob Morgan** - Quartz Twins: Rare, Rarer, Rarest
- Bud Poulin** - Specimens from the John H. Marshall Collection
- Carl Francis** - Maine Mineral and Gem Museum 1
- Carl Francis** - Maine Mineral and Gem Museum 2
- Dale Russell** - COLLECT BIG or stay home
- David DeBruin** - Minerals
- Don Lapham** - Collected in 2014
- George Loud** - New England Refugees in South Carolina
- George Thompson** - Yukon Phosphates
- Jeff Morrison** - New Finds from the Havey Quarry, Maine
- John Betts** - Minerals
- Jonathan Levinger** - Minerals
- Marian Lupulescu** - New York State Museum Specimens
- Mike Walter** - New York State Minerals
- Technical Session** - Specimens from the Technical Session
- Terry Huizing** - British Minerals

Cover Art by Susan Robinson

