THE MINERAL VEIN

Official Newsletter of

THE MINERAL SOCIETY

DECEMBER 2011

CLASSIC MINERALS OF ENGLAND

What makes minerals from a particular locality "classic"? This might be a rather subjective definition but most collectors would agree on a few fundamentals: the mineral specimens themselves must be outstanding for their species, the appeal of the locality must have lasted for many decades, and the site must have produced an abundance of world-class specimens that are held in the major private and museum collections. By any measure, England hosts an impressive number of classic mineral localities and these were the subject of the presentation by local collector Tony Smith at the MSM's November meeting. Tony has been collecting minerals for about 40 years and was also a dealer for 30 years; he has always had a special interest in minerals from classic localities.

By Canadian standards, England is a fairly small country, only 1/5th the size of Manitoba, but it has produced and extraordinary number of world class mineral specimens. There are two main areas of mineralogical interest: 1) A northern region which includes the counties of Cumbria, a portion of Durham and a small area of Northumberland, and 2) A southern region including the counties of Cornwall portion of Devon.

The Northern Region produced great specimens from 5 main areas plus the Boulby Mine. The iron (hematite) mines of the West Cumbria Iron Ore Field produced very good hematite specimens as "kidney ore" (photo above) and specular hematite, and several produced incredible examples of other minerals. The mines of the Egremont area (Pallaflat, Gilfoot Park, and the Bigrigg Mines) were the source of arguably the world's best calcites (which is now reflected in their price on the market!). Mines in the Frizington area (Mobray, & Parkside Mines) produced outstanding barites that again are arguably the world's best and have dominated this category for a century.

Calcite crystals, Egremont, England. 16x13x6cm, sold for $55,000! Photo from The Arkenstone mineral company.

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The Mineral Vein is published monthly from September to June.

Meetings are held on the first Wednesday of each month from September to May inclusive at the Manitoba Museum in room P47 on the Planetarium level. They begin at 7:30 PM and feature announcements, an invited speaker and a raffle. Members are encouraged to bring along any new, interesting specimens or specimens appropriate to the speaker's topic.

Field Trips take place from May to September to interesting sites in Manitoba plus neighbouring provinces and states.

Membership: A single membership is $15 while a family membership is $20. Memberships run from October to October and the annual dues are payable each October.

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UPCOMING EVENTS

Annual Christmas Party: The next meeting of the MSM will be the annual Christmas party on December 11th. The location will be the same as last year, the Garden City CanadInns hotel at 2100 McPhillips Street in the Ambassador #4 room. Cocktails at 4:30 PM & Dinner at 5:30 PM. Guests order from the waiter and the buffet features prime rib $18.99 (seniors just $16.99). (Vegetarians and dissenters etc. may order from the menu).

Once again we will be having a fun-filled auction of rocks, minerals, fossils and related items, and even some not so related items like wine. Our own Tony Smith has agreed to serve as auctioneer once again. Please have a look through your collection for specimens you'd care to donate and bring them along.

DUES REMINDER

Annual dues for MSM members are now payable. Please take a moment now to mail in your cheque to the club at the address on Page 2. Individual memberships are $15 per year and family memberships are only $20. Long delays in payment of dues makes for a lot of extra work by your treasurer and newsletter editor in particular, so we would really appreciate you taking the time to send in your payment now if you have not already done so.

CLASSIC MINERALS OF ENGLAND *(Cont. from P. 1)*

Classic barite crystals from Frizington, England, 8x6x5 cm. Sold for $2000. Arkenstone photo.

A little farther to the northeast are the lead mines of Caldbeck Fells which are noted for their great secondary minerals produced by deep weathering and alteration of the primary lead-sulphide ores (mainly galena). The Dry Gill produced wonderful mimetite (lead arsenate) specimens, specifically the campylite variety, whereas the Roughton Gill and Driggith Mines are famous for their pyromorphite.

Magnificent mimetite crystals, campylite variety, from Caldbeck Fells, England. 4x3x2 cm.
© www.johnbetts-fineminerals.com

Pyromorphite crystals about 7x5x3 cm, sold for $9,000. Arkenstone specimen and photo.

Continuing northeast to the edge of Cumbria we find the old barite mines of **Alston Moor**, long noted for their exceptional crystals of barytocalcite, witherite and alstonite, and in fact they are the type locality for all three. The primary locations were the Blagill, Brownley Hill, & Nentsberry Haggs Mine with some from across the border in Northumberland at that Settlingstones and Fallowfield Mine (Don't you love these wonderful mine names?).

Witherite from Alston Moor. Arkenstone photo

County Durham is home to numerous fluorite mines including those of the Weardale area which produced, and are continuing to produce, England's best fluorites. Particularly noteworthy are the Frazer's Hush (purple), Height's (green) and Rogerly (green/purple) Mines. These fluorites are known for their intergrown penetration twins of perfect cubic crystals, their range of colours, commonly large size, and their strong fluorescence (and yes, fluorescence is named after fluorite). In the adjacent county of Cumbria we find the Hilton Mine, noted for outstanding yellow fluorite.

The last locality of note in the northern region is the Boulby potash mine northern Yorkshire County. The world's best boracite and hildgardite specimens were found here in the early 1990s. These are both borate minerals that typically occur in salt and potash deposits.

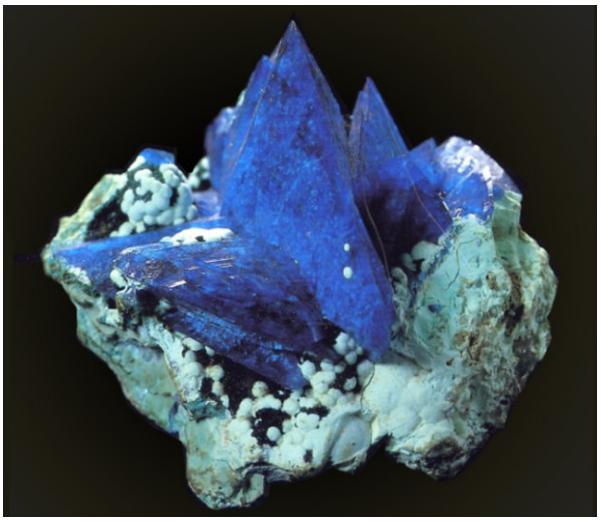
The Southern Region has been producing copper and tin with lesser amounts of lead, silver, antimony and iron as far back as 1500 BC. The ore veins (lodes) are found primarily in metamorphosed sedimentary rocks around Permian granite intrusions. There are over 4000 mines in the area and a number of these have produced outstanding specimens. Tony discussed 9 of the top producers as well the Hope's Nose gold deposit.

The **Levant Mine** produced both lead and tin beginning around 1790. The lodes were worked out 1 mile under the bed of the Atlantic Ocean to a depth of 2000 ft. It is most noted for excellent chalcocite specimens.

The **St. Ives Consols mine** was worked from 1812 to 1898 for copper and it too was noted for excellent chalcocite specimens.

Chalcocite from St. Ives; 3.5x3x2cm; Arkenstone photo.

The Wheal Gorland (note: Wheal=mine) produced many specimens of very fine secondary copper minerals from ore so rich that the miners were placed under strict surveillance. The richest portion was the muttrell lode that was first worked in the 1790s and produced great specimens of liroconite, cuprite, clinoclase,



Outstanding specimen of the copper mineral liroconite from the Wheal Gorland. Largest crystal is 2cm tall. County Museum, Truro, specimen; photo from "Minerals of Cornwall and Devon".

olivenite, and pharmacosiderite. Mining ceased by 1864.

The **Wheal Hope** produced superb examples of one of your editor's favourite type of specimens: galena pseudomorphs (replacement) of pyromorphite. I've always found it amazing that weathering and alteration of galena (lead) ores can produce such sharp, beautiful, usually green crystals of pyromorphite which at some later time undergo the reverse process and turn back into galena while still preserving the crystal form of the pyromorphite.

Galena pseudomorphs of pyromorphite crystals from the Wheal Hope. Compare the form of these to the pyromorphite crystals on Page 3. Photo from The Arkenstone mineral company.

The **Restormel Mine** produced iron ore during the 19th century and was closed in 1883. Originally known as the Trinity Mine, it was renamed the Restormel Royal Iron Mine after a visit by Queen Victoria and Prince Albert in 1846 during which the Prince took up a pick and swung it "like a man, and he got a bit of ore", resulting in great cheers from the miners. For mineral collectors since the late 1700's this mine has been noted for its outstanding specimens of crystallized **goethite**. For a mineral that typically occurs as often mundane, non-crystalline crusts and replacements of earlier minerals to produce such large and well formed crystals is a rare treat indeed.

The best example of goethite crystals from the Restormel Mine. Main crystal is 5 cm tall. British Museum specimen purchased from Richard Talling. Photo from "Minerals of Cornwall and Devon".

Now we come to one of the most well known classic localities of Britain, the **Herodsfoot Mine**, best known for the world's finest **bournonite** specimens. This was a lead-silver mine worked from the 1840s and bournonite itself is a lead-copper-sulphur-antimony mineral. It occurred sparingly in vugs within quartz veins in the upper levels of the mine and most crystals were collected between 1858 and 1868 by Richard Talling, the greatest Cornish mineral dealer of all time. The mine manager at one point had Talling banned from the mine so as not to interfere with production but he then purchased shares in the mine and could not be kept out anymore. The mine also produced some good quality crystals of **tetrahedrite** which locally occurred with the bournonite.

World-class bournonite from the Herodsfoot Mine, Liskeard, Cornwall, forming "cogwheels" up to 5cm. ~12cm across. Carnegie Museum specimen; editor's photo.

The **Phoenix Mine** produced both copper and tin from the 1840s to 1890s including very good specimens of cuprite and outstanding examples of the phosphate species – chalcosiderite and libethenite.

The **Old Gunnislake Mine** started up in the 1700's for copper and tin and produced the finest metatorbernite specimens in Cornwall at the 540' level.

The **Virtuous Lady Mine** was a small copper mine which probably began producing as early as the 16th century and was worked intermittently until about 1875. After mining of ore ceased, it was worked for specimens and is noted for epimorphs of siderite after fluorite and pyrite after barite. An epimorph is a hollow cast formed by one mineral that coats another and preserves the form of the original after it has been dissolved away (see photo on next page).

Lastly we come to the only gold occurrence covered in Tony's presentation, the **Hope's Nose** gold deposit near Torquay in Devon. The gold here occurs in small calcite-dolomite veins near the sewage outfall along the coast. It typically occurs in a beautiful herringbone pattern which is easily revealed when etched from the calcite with dilute acid (see photo below).

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An amazing 9 cm epimorph (hollow cast) of siderite after fluorite, partially filled with quartz crystals grown on chalcopyrite. British Museum specimen, photo from "Minerals of Cornwall and Devon".

Gold from Hope's Nose, Cornwall; about. 3x3cm. Smithsonian specimen, editor's photo.

Needless to say it is impossible to cover the great number of classic mineral localities in England in much detail in a 1-hour presentation or in one article such as this. However, Tony gave us a great summary and we are indebted to him for all his work on this presentation, sharing his knowledge with us, bringing along some of his personal collection, and hopefully whetting your appetite for these classics. If you'd like to learn more I would recommend the following terrific sources:

EMBREY, P. G. and SYMES, R. F. (1987) *Minerals of Cornwall and Devon,* British Museum (Natural History) 154p.

TINDLE, A.G., 2008. *Minerals of Britain and Ireland*. Terra Publishing, 616 p.

WILSON, W. E. et al. (2010) *Classic Minerals of Northern England (The Lindsay Greenbank collection),* The Mineralogical Record, **41** (1) Supplement, 147p.

Some of Tony Smith's personal collection of classic English minerals including two large barites (2nd and 4th from the left in the front row). Displayed at the November meeting of the MSM.

MANITOBA MINES BRANCH CONVENTION 2011

By John Biczok

It was another great turnout this year at the 43rd annual convention of the Manitoba Mines Branch, held November 17-19 at the Winnipeg convention centre. This convention brings together the provincial government geologists and related professionals with the mining companies that are producing and exploring in this province. Here one can learn of the newest plans for upcoming mines and results of the latest geological surveys. So even if you're not a professional geologist, it's still a great place to get some ideas for mineral collecting sites!

The convention is also one of the Mines Branch' major outreach programs and they bring in a number of outside groups to attract members of the public and increase their interest in the earth sciences. Once again, the Mineral Society was present in force with two mineral displays, the Robinson collection of colourful copper, lead and zinc minerals and our fluorescent mineral display, plus the ever-popular glue-card table, and yours truly giving a 25-minute talk on mineral collecting during the open house session. A greater than normal number of people with a long interest in minerals and rocks dropped by the booth and took away membership applications. Our great volunteers at the glue card table helped our young visitors create 287 instant mineral and fossil collections for (for which we take in $1.50 each). Attendance by the public overall might have been somewhat lower than last year due to fewer participating school groups and a smaller (and more manageable!) crowd on Saturday morning than the incredible public turnout last year, nevertheless, this was still a very positive event for the MSM due to the higher number of potential new members we interacted with.

Thanks once again to our wonderful volunteers: Marion Foster, Marjorie Turton, Scott Jonatanson, Wendy & Ron Anthony, Bill & Yvonne Searle, Jack Bauer, Mavis Bedford and Lisa Grabowski for their great work.

The Mineral Society's northernmost member, Mr. Mike Beauregard (on the left), who lives in Arviat, Nunavut. Here's Mike manning his booth on behalf of the Nunavut government at the Manitoba Mines Branch convention and showing off some carving stone to an interested delegate.

Eager young students putting together mineral and fossil collections at the MSM's glue card table, staffed this day by Scott Jonatanson, Marion Foster and Wendy Anthony.

Marjorie Turton filling in for George Green at his lapidary table and showing a rock tumbler to some visitors.