NEW ADDITIONS TO THE MATTY MITCHELL ROCK COLLECTION

NATIVE COPPER FROM SEAL LAKE, LABRADOR

Beautiful massive specimen of native copper donated by Silver Spruce Resources.

LAKE DOUGLAS VMS PROSPECT

Large slab of rock showing alteration and Pb-Zn-Cu-Ag massive sulphide mineralization, Central Newfoundland.

DUCK POND MINE

Underground specimen of Cu-Zn-Au ore from the new mine in Central Newfoundland.

NALUNAQ GOLD MINE, SOUTHERN GREENLAND

Crew Gold has generously donated a suite of 5 samples representing footwall, hanging wall and mineralized (20 g/t Au) quartz veins from Greenland's only operating gold mine. The samples are available for study at the Matty Mitchell Prospectors Resource Room. Ore from the Nalunaq Mine is shipped to the Nugget Pond Mill in Newfoundland for processing.

The Nalunaq gold deposit is mesothermal, vein-type, gold mineralization ("motherlode" style gold) hosted by amphibolites. These amphibolites are dark green metamorphic rocks that were originally formed by volcanic eruptions of pyroclastics and pillow lavas. They are part of a group of metasedimentary and metavolcanic rocks deposited just less than 2 billion years ago. The original volcanic and sedimentary rocks were subsequently severely deformed and metamorphosed to become a sequence of amphibolites and metasedimentary schists and gneisses. At the Nalunaq mine the sedimentary rocks are represented by a metamorphosed chert and the volcanic rocks by metamorphosed pillow lava and associated metagabbroic sills. These metamorphosed rocks were then intruded by several types of granites, one type overlapping with deformation and the other type being younger than the deformation.

The Nalunaq gold deposit comprises two major gold-bearing quartz veins occurring along a NE-striking (ductile) fault. The gold and quartz are interpreted to be related to fluids associated with the intrusion of the oldest group of granites mentioned above. The **quartz veins vary from 0.05 meter to 1.8 meters in width** and display pinch and swell structure. They are sheeted, having stripes and bands of calc-silicate minerals. The 'Main Vein' of Nalunaq has so far been estimated to be **1700 m long and on average 0.7 metres wide.** Visible gold mineralization occurs in the quartz veins and in calc-silicate altered shear zones sub-parallel to layering in the amphibolites. Observations made underground have led geologists to note that the gold tends to be associated with the seams of calc-silicate minerals in the quartz veins. **The overall resource base is 1.2 million ounces.**

There is quite a variety of minerals at the Nalunaq mine. **Sulfide minerals associated with the gold mineralization include arsenopyrite (FeAsS), loellingite ($FeAs_2$), pyrrhotite (FeS), pyrite (FeS_2), chalcopyrite ($CuFeS_2$) and galena (PbS)**. Calc-silicate minerals at the deposit include diopside, Ca-rich plagioclase, Ca-rich amphibole and epidote. Other key minerals are biotite and scheelite. High arsenopyrite (always less than 1%) is generally associated with high gold, but many samples having gold are lacking in arsenopyrite. **Pyrite is generally rare in the Main Vein System, and where it is in significant amounts gold grades are low**.

The commencement of operations at Nalunaq was a milestone for Greenland, being its first gold mine and the first new mine to be developed in the country for over 30 years. The Nalunaq mine produced approximately 75,000 oz gold in 2006. To learn more about Greenland geology and minerals go to http://www.geus.dk/geuspage-uk.htm

NOTE TO LABRADOR PROSPECTORS *(contributed by B. Ryan and C. Gower)*

The rocks hosting the gold-bearing quartz veins at the Nalunaq mine are thought to be similar to metamorphosed sedimentary and volcanic rocks exposed from Kaipokok Bay southwards into the Benedict Mountains, the eastern part of the Labrador Central Mineral Belt. Currently (2007) this area is the target for uranium exploration.

Southeast of the Kaipokok Bay area there are cherts and pillowed lavas among the metamorphosed sedimentary and volcanic rocks stretching from the Kitts uranium deposit southwest to Post Hill. Deposition of the sediments and eruption of the lavas occurred about 2 billion years ago. These rocks were subsequently deformed and metamorphosed and then intruded by granites.

Another younger episode of sedimentation and volcanism produced part of the package of rocks in the Makkovik to Benedict Mountains area and this package of rocks also suffered deformation, metamorphism and intrusion by huge granitic masses. The volcanic and sedimentary rocks are predominant around Makkovik, but southeast towards the Benedict Mountains the granites comprise the bulk of rocks.

So, from the perspective of probable gold environments, this whole region of the eastern Central Mineral Belt has the “right stuff” (deformed volcanic and sedimentary rocks intruded by a multitude of granites) to hold gold-bearing quartz veins like those of the Nalunaq mine in southern Greenland.

Farther south in Labrador, close examples of the amphibolites that host the Nalunaq gold deposit are mafic volcanic rocks in vast tracts of gneisses within the Grenville Province. These are probably similar in age to the metasedimentary and metavolcanic rocks in southern Greenland. Local names for these include the Paradise metasedimentary gneiss belt and the Disappointment Lake gneiss. Although dominantly mica-rich, apart from mafic volcanic rocks, these gneisses also include quartz-rich gneisses, ferruginous chert, quartzite and minor calc-silicate units. In eastern Labrador, mafic volcanic rocks, including pillow lavas, have been recognized on Bull Island (northeast of Charlottetown). More deformed equivalents of similar rocks occur in southeastern Sandwich Bay and at the eastern end of The Backway. Mafic volcanic rocks of similar age occur in the Beaver gneiss in central Labrador and within gneisses in the Lac Joseph area in western Labrador. Numerous gossans, some of which are known to carry mildly anomalous gold and copper values, are associated with the gossans. The gossans likely represent ferruginous- and sulphide-facies metachert in part. These rocks may have formed in a geological setting equivalent to the ones that host the Nalunaq deposit in south Greenland.

The metasedimentary and metavolcanic rocks of southern Labrador are intruded by a wide range of granitoid rocks. Most are younger than those in southern Greenland, but older granitoid rocks, similar in age to those of southern Greenland occur east of the Mealy Mountains area. They occur close to metasedimentary and metavolcanic gneisses. Similar-aged rocks may also occur between the Benedict Mountains and Groswater Bay.

A specific association of quartz veins with mafic metavolcanic rocks has not been established, but quartz veins (probably of many different ages) are common throughout the region. In light of the setting of the Nalunaq deposit, such quartz veins should be considered as candidates for gold mineralization.

Whether working in Labrador or on the Island, do your research first on the Resource Atlas to locate possible gold anomalies in association with arsenic, base metals or tungsten for example.