

Newfoundland and Labrador

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Looking for gold at the "Knob Showing" near Glenwood during the CIM Teachers Field Trip.



Ted Keats (center) receiving lifetime prospecting award.

GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

Department of
Mines and Energy

Mines Branch



Profile of a Prospector



Alex Turpin is one of this province's most seasoned prospectors having been active in the mineral industry since 1971. Born and raised in the town of Little St. Lawrence on the Burin Peninsula, Alex first became involved in prospecting when he worked with Radex Minerals in the St. Lawrence area, searching for uranium, copper and molybdenum. His next prospecting job took him to the other side of North America, where he prospected in Alaska.

Since those early days, Alex has been active throughout the Island and in Labrador prospecting and exploring for a wide range of minerals including fluorspar, iron ore, nickel, copper, lead, zinc, gold and silver, and was successful in discovering many mineral showings and prospects. He has worked with numerous junior exploration companies along with majors including Noranda and Inco. His work has included contract exploration services to the mineral exploration industry.

He was hired by Archean Resources Limited in 1995 as field camp supervisor and was one of the first exploration personnel active on the world-class Voisey's Bay project. In recent years, he has prospected on his own claims in the province and teamed up with others to stake claims and explore their properties.

Alex's passion and love of prospecting and the tireless search for the "mother lode" continually brings him and his sons, who are also active, back to where he started – the Burin Peninsula; here in his own backyard he continues to prospect.

Teachers Field Trip A Success

On Friday, September 25, 1998 a group of 11 provincial teachers from Newfoundland and Labrador gathered in Gander for a three-day field trip sponsored by The Canadian Institute of Mining, Metallurgy and Petroleum (CIM), Newfoundland Branch, as part of its 100th Anniversary Celebrations.

The coordination of the event was done by Tony Burgess and Dave Evans of the Department of Mines and Energy along with Peter Dimmell of Maple Mark International Inc.

The field trip was designed to inform our children's educators of the geological and technical aspects of mining throughout our province.

From Gander, the group traveled to a gold showing near Glenwood. Interest soon peaked as the group explored the site looking for specimens of quartz containing gold to take back to class and show their students.

Then it was on to International Granite's Jumpers Brook dimension stone operation where everyone observed quarrying, cutting and polishing of Black Granite. That evening in Baie Verte, Steve McAlpine, General Manager of the Nugget Pond gold mine, gave an overview of Richmont Mines operation.

After that, it was time to relax at a welcoming reception sponsored by the Baie Verte Branch of the CIM.

Day two started shortly after daybreak and comprised of visits to several past, present and potential mine sites. These included a visit to the now closed Rambler Mine where Peter Dimmell explained the various geological features of the area. The group then traveled to the Nugget Pond gold mine, owned by Richmont Mines. Following a barbecue lunch served by the management and staff, the group completed a tour of the complex, including the underground and milling operations.

Next the teachers visited the museum at Tilt Cove and viewed the site where massive sulphide discoveries were first made in 1857. The Tilt Cove mine produced eight million tonnes of ore during a life that spanned more than a century.

Completing day two, Ferd Morrissey of the Department of Mines and Energy gave a slide presentation on the rehabilitation of the natural environment after a mine has closed. He also explained some of the new regulations that government will implement to ensure that mine sites are rehabilitated.

Day three started with a brief visit to the site of the now closed Baie Verte asbestos mine, and then to the site of the oldest known mine in North America - The Dorset Eskimo soapstone quarry in Fleur de Lys.

On the return trip to Gander there was one more stop, and Bill Butler of Hi-Point Industries conducted a tour of his peat harvesting operation. This complex has developed from a horticultural operation to one which now manufactures several oil absorbent products which are used extensively around the world.

Ted Keats Receives Lifetime Prospecting Award

Suley Joe was a Mic Mac trapper and prospector who traveled the region between Baie D'Espoir, on the south coast and Port Blandford on the northeast coast of Newfoundland in the late 19th and early 20th centuries. Suley Joe was the grandfather of Theodore (Ted) Keats, the patriarch of the Keats family, formerly of Port Blandford and lately of Benton, Newfoundland. The Keats family tradition records the discovery and subsequent loss of the location of a "silver mine" by Suley Joe somewhere in his trapping area.

In the late summer of 1969, Ted and his son Allan (Al) visited the Noranda Exploration office in Gander to describe the lost silver showing and their attempts to find it. Noranda was not interested in the silver prospect but needed a couple of prospectors to prospect the upper Terra Nova River area, above Newton Lake. Ted and Al were hired, given a canoe and airlifted into Nanedock Lake to prospect. This work took a couple of months and resulted in the discovery of a number of small occurrences of base metals (mainly copper), some of which were later evaluated by gridding and follow-up work. Ted and Al were kept on in the winter of 1969/70 to work on geophysical surveys with Noranda crews, who were mainly from the mainland.

Fred, Al's brother, was subsequently hired to work on the geophysics during the winter and prospecting in the summer in the early 1970's. As exploration activity in the province picked up under the flow-through financing

regime in the early to mid 1980's, brothers Calvin and Suley, and brothers-in-law, Calvin Crocker and Bob Stares, were hired to prospect and carry out geophysical and geochemical surveys. In the 1990's, as Noranda's exploration budgets increased due to investments in properties such as the AND Concession area, Kevin Keats (Al's son); Michael (Mick), Steve and Sandy Stares (Bob's sons); Rick Crocker (Calvin's son); Cecil Barrett and other grandsons, worked with Noranda and subsequently on their own, or with other companies. Presently, 8 of Ted's grandsons work in the mineral industry, as prospectors/mineral exploration technicians with Noranda or as independent prospectors.

Discoveries associated with the Keats family include, the Point Leamington massive sulphide deposit by Ted and Al in 1971; the Burnt Pond showing by Ted and Al in 1973; the Duck Pond/Tally Pond massive sulphide deposit in 1985 which was related to the discovery of massive sulphide boulders by Al in 1975; the Devil's Cove Au deposit by Al Keats/Brian Rowsell in 1986 - this started the "gold rush" on the Baie Verte Peninsula which subsequently resulted in the Nugget Pond (Richmont Resources) discovery; the GRUB Line gold discoveries such as Duder Lake and others by Al, Fred, Calvin Keats and Calvin Crocker in the period from 1987 to 1989 and the Beaver Brook antimony deposit (now owned by Roycefield Resources) by Suley and Calvin in 1987.

In recognition of his contributions to the Newfoundland minerals industry, Ted Keats was awarded the Lifetime Prospecting Achievement Award by the Newfoundland and Labrador Explorationists (NALE) at the Baie Verte Mining Conference held June, 1998 in Baie Verte.

Geological Museum Planned for Signal Hill

The provincial government has granted a long-term lease to 18 acres on Signal Hill, sought by the Johnson Family Foundation, as the site for a geological museum. Paul Johnson, Chair of the Foundation, says, "We want to present, in a very dramatic and professional manner, the outstanding position of this province, in a visual interpretation of the Earth's geological history. The museum will explain the unique and fascinating stories to be told, using the topography visible in our terrain and coastlines."

It is not widely known that the span of time represented by the geological history of Newfoundland and Labrador

extends back for an incredible 3 billion years. Nearly all of the earth's geological time periods are visible in Newfoundland and Labrador, and only a handful of places in the entire world could tell such an extraordinary story of the Earth's history.

The museum concept has been researched by a five-person "Provincial Planning Team", led by Dr. Jeremy Hall, a professor at the Department of Earth Sciences at Memorial University. Seven museums in Canada and the United Kingdom were selected for their notable Earth Science exhibits, and were visited during the fall of 1997. Dr. Hall reported, "Interviews with the administrators of these museums have helped determine the most appropriate and attractive approach for the design and creation of our museum." The name Johnson Geo Centre has been proposed, and a tentative Mission Statement has been defined. The most salient aspects of our geological history are being written into a "Storyline" for the museum, which will be the guide for the interpretive exhibits to be developed over the next year and a half. The land for the museum is adjacent to the Signal Hill National Historic Site boundary. Over 750,000 persons pass by this site annually.

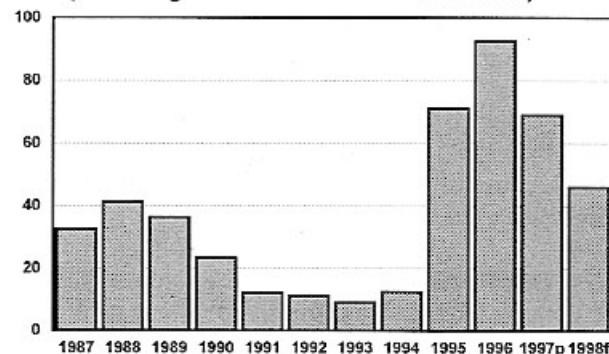
Mr. Johnson advises that recruitment is presently underway for a Museum Director, to be present at the earliest opportunity, in developing the overall theme and exhibits for the museum. A search for exhibit designers has begun, and the process of developing an architectural design for the building is imminent. It is anticipated that galleries, to tell the stories of minerals and hydrocarbons onshore and offshore of the province, will be incorporated into the museum.

The Johnson Geo Centre is scheduled to open in the spring of 2000.

Exploration Update

The value of exploration activity for Newfoundland and Labrador in 1998, is forecast to be approximately \$50 million, a decrease of 33% from the 1997 level. All the major exploration indicators reflect this decrease. The expected exploration activity for 1999 is projected to continue in this trend. Exploration efforts continue to focus on base metals, followed by gold and industrial minerals.

Newfoundland and Labrador Exploration Expenditures (Including Administration and Overhead)



p: preliminary f: forecast
Source: Department of Mines & Energy

Anvil Resources agreed to purchase PolyMet Mining Corp's interest in the Voisey's Bay West, Harp Lake and Pacific Golden Spike properties. The terms of the agreement include payment of \$75 000, payable in three installments over a period of six months, and 250 000 common shares of Anvil Resources.

In July, **Fort Knox Gold Resources Inc.** announced that it had reached a three-year agreement in principle to commence a strategic alliance with Inco Ltd. to explore for Voisey's Bay type nickel-copper-cobalt deposits. The agreement covers all of Labrador except those areas already held by Inco Ltd., or its subsidiaries. The strategic alliance will include data compilation and regional reconnaissance surveys designed to define highly prospective lands for acquisition. Inco Ltd. will act as operator both for the data compilation and reconnaissance surveys as well as for any detailed exploration on acquired properties. Fort Knox Gold also announced in mid-October, acquiring 100% interest in three option-to-purchase agreements on 110 claims with good gold values on the Avalon Peninsula. Fort Knox Gold plans to conduct trenching, mapping, geophysical surveys and diamond drilling to evaluate these properties. Fort Knox Gold has recently staked 220 claims in the Diversion Lake area, approximately 70 km east of Buchans, where values greater than 90 g/mt gold have been reported.

Donner Resources Ltd./Teck Exploration Ltd., and their joint-venture partners are continuing their program of geological mapping, detailed ground geophysics and diamond drilling commenced earlier this year on its Voisey's Bay South property, approximately 90 km south of Voisey's Bay. Although drill results released in 1998

have been disappointing, the geological model including the recognition of possible feeder zones has been further developed.

In August, **Gallery Resources Limited** announced the discovery of a new zone of semi-massive to massive sulphide mineralization on its Harp Lake 2 property. Values ranging from 0.42% to 0.70% nickel, 0.34% to 0.42% copper and 0.084% to 0.151% cobalt have been reported. In September, the company announced that it had intersected 158 m of disseminated sulphide mineralization at its Okak Bay property; visible pyrrhotite and chalcopyrite were reported.

Copper Hill Corporation completed its 1998 exploration program on its northernmost Labrador diamond claims in September. A program of rock sampling, stream sediment and soil sediment sampling has been completed. Copper Hill also announced that prospecting and geological mapping, completed in 1998, discovered massive to semi-massive sulphide on its Copper Pond prospect located 40 km southwest of Postville. Good values of copper and nickel have been reported in soils from previous surveys. Results of this work have not been released.

New Island Resources Inc. completed a program of prospecting, geology, line-cutting, geochemistry, and ground geophysics on its Glover Island gold property, located southwest of Corner Brook. Results for 1998 are confidential. New Island Resources also maintained 160 claims covering gold potential in the Robinsons River area.

In July, 1998, **Buchans River Limited** signed an agreement with Noranda Mining and Exploration Inc. to option 100% in the Little Sandy properties, totalling about 7 square km of concession lands, located from 7 to 15 km east of Buchans. The Little Sandy Prospect has a drill-indicated resource of 163 260 tonnes grading 1.9% copper. Also in late July, Buchans River Ltd. signed an agreement with Newfoundland Mining & Exploration Ltd. to acquire a 100% interest in the 64-claim Granite Lake property and the 78-claim Barasway de Cerf property. Buchans River is currently developing a diamond-drill program to evaluate both properties. On September 9, 1998, Buchans River Ltd. announced that it had joint-ventured all of its mineral holdings in the Buchans area to Billiton Exploration Canada, Limited.

Richmont Mines Inc. continues its exploration program designed to increase ore reserves. It has also completed a 6-hole diamond-drill program to test a new gold showing located less than 3.2 km from the mine site.

Noveder Inc. explored its Cabot - Fleur de Lys, Betts Cove, Tilt Cove and Rainbow - Kitty - Burton projects on the Baie Verte Peninsula. Diamond-drill programs were completed on all projects. On the Cabot-Fleur de Lys property, diamond drilling revealed copper and cobalt stringer mineralization. Assays of 0.40% copper and 0.01% cobalt over 28.91 m have been reported. Noveder Inc. has also acquired 25 claims in the Goobies area from Leroy Smith. These claims, located on the Isthmus of Avalon, about 100 km west northwest of St. John's, are being explored for gold.

Mutapa Gold Corporation completed a 4400 m diamond-drill program in mid-1998 on its Little Deer Mine project. The program tested possible extensions to the Little Deer deposit where reserves are estimated at 210 000 tonnes grading 1.53% copper. Further diamond drilling is planned.

During 1998, **Noranda Mining and Exploration Inc.** sought joint partners to explore its AND Charter concession, its claims and mining leases all located in the general Red Indian Lake area. Noranda divided these lands into six property packages, most of which have base-metal potential with some tonnage and grade previously outlined and numerous untested targets.

On July 20, 1998, **Mountain Lake Resources Inc.** announced that it had signed an agreement with Noranda Mining and Exploration Inc. on the Valentine Lake Belt. In early August, Mountain Lake Resources commenced a field program of geological mapping, geophysical and detailed geochemical surveys prior to diamond drilling. Exploration will initially focus around some of the higher drill intercepts cut in the late 1980's. Numerous soil and induced polarization geophysical anomalies also remain to be evaluated.

Phoenix Minerals Corp. began mining and crushing barite at Collier Point, Trinity Bay in 1998. The barite is used to produce drilling mud for the offshore oil industry in eastern Canada. Phoenix Minerals also acquired additional claims in the area in August, 1998. A program of prospecting, geology, geochemistry and trenching has been completed on some of these claims. Phoenix Minerals Corp. has also completed a limited exploration program on its Cross Point - Cuslett claims on the east side of Placentia Bay.

In August, **Rubicon Minerals Corp.** announced the results of a 5 hole, 2034 m diamond-drilling program completed on the Seal Bay base-metal prospect about 12 km northeast of the Point Leamington deposit. Results of this diamond-drilling program include 89.1 m grading 0.80% zinc and 0.16g/mt gold. During the course of the

diamond-drilling program, a new surface massive sulphide discovery was made about 3.5 km southeast of the drilled zone. Average analysis of two grab samples from the showing are 1.03% zinc, 0.30% lead, 41.7 g/mt silver and 1.28 g/mt gold. In September, Rubicon Minerals signed an agreement to acquire 100% interest in the Point Leamington deposit from Noranda Mining and Exploration Inc. Prior to December 31, 1998, Rubicon Minerals plans to develop a digital database and complete an in-depth review of all data relating to the deposit.

Celtic Minerals Ltd. and joint venture partner **Jilbey Exploration Ltd.** signed a letter of intent with Rio Algom Exploration Inc. in August whereby Rio can earn an interest in the Hungry Hill property. Results reported to date from Celtic/Jilbey's exploration programs include values of 4.99% zinc, 16.44g/mt silver and 0.85g/mt gold over four metres. Rio Algom Exploration intend to start a diamond drilling program on this property. Celtic Minerals also signed joint-venture agreements with Billiton Exploration Canada, Limited, on the 118 claim Buchans Junction property, currently held 50/50 by Celtic Minerals and Jilbey Exploration.

Altius Resources Inc. announced, on September 9, 1998, that it had entered into a joint-venture agreement with Billiton Exploration Canada, Limited on the Victoria River property south of Red Indian Lake. Work continued on the Big Arm property which is located approximately 70 km southwest of Buchans, in the Victoria Lake area and covers 16 claims which contain quartz vein-hosted gold mineralization assaying up to 27.4 g/mt gold and 154 g/mt silver.

The Tom Joe property covers 75 claims and is located approximately 50 km each of Buchans. The claims cover a newly discovered zone of epithermal-style gold mineralization. Grab samples assay up to 1.88 g/mt gold. Some diamond drilling may be completed on these properties in 1998.

Thunderwood Resources Inc. announced, on September 23, 1998, that it had signed a letter agreement with Noranda Mining and Exploration Inc. giving Thunderwood Resources the right to acquire a 100% interest in 7927 hectares of land which covers the Tally Pond base-metal deposits, located about 30 km southeast of Buchans.

Mining Development Update

In July, **Major General Resources Ltd.** and **McWatters Mining Inc.** signed a letter of intent to allow development and production of the Hammerdown and Rumbullian Gold deposits near Springdale. The deal calls for McWatters to complete a feasibility study within 12 months.

Trinity Resources and Energy Ltd. has purchased the pyrophyllite mine in Long Pond from Armstrong World Industries and hopes to reopen the operation in 1999. The new operating company, **Newfoundland Pyrophyllite**, will not ship the raw pyrophyllite as the previous owners did; it intends to mill the pyrophyllite for use as fillers in the paint, plastics and paper industries.

Trinity Resources and Energy Ltd. removed a bulk silica sample from its La Scie deposit this past summer and results are encouraging. If contracts are in place by year-end, mining could begin next summer.

Midatlantic Minerals proposed dolomite/limestone operation at Aguathuna has cleared the provincial environmental assessment, as is waiting for the federal government to complete its comprehensive environmental study. Production is now scheduled to begin in 1999.

United Bolero Development Corp. is continuing its activities to reactivate the Buchans barite plant. The company expects to start producing drilling mud for the oil industry in November, 1998.

In July, 1998, the Government of Newfoundland and Labrador announced its commitment to construct a \$10 million deepwater port facility at St. Lawrence. This investment is based upon positive results from a feasibility study, and **Burin Minerals** securing adequate financing for its fluorspar mine/mill.

Galen Gypsum Mines Limited registered its proposed new access road to the Coal Brook gypsum quarry for environmental assessment in August, 1998.

In September, 1998, **Pennecon Limited**'s proposal to mine the Boswarlos deposit of barite/celestite cleared the provincial environmental assessment.

Tests of Shabogamo Mining and Exploration's bulk silica sample earlier this year confirmed that the quartzite exceeded the requirements for the production of silicon metal. The company subsequently secured a \$50 million, 10-year contract with SKW of Quebec. In September, 1998, Shabogamo Mining and Exploration Limited registered its proposed quartzite quarry near Labrador City for environmental assessment.

Environmental panel hearings for the Voisey's Bay mine/mill project began on September 9 and will be completed on November 6, 1998.

Prospectors Resource Room

Government initiatives in prospector training and assistance, coupled with a number of recent prospecting successes, including major discoveries such as Voisey's Bay, have stimulated a groundswell of local interest in prospecting for mineral deposits.

Newfoundlanders and Labradorians from all walks of life have taken a direct, active and personal involvement in mineral prospecting. The existing prospecting group includes apprentice, novice and recreational prospectors, as well as a growing core of established professional prospectors. The unprecedented growth of the group and their increasing need for mentoring, training and technical support, has led to the establishment of a Prospectors Resource Room within the Geological Survey of the Newfoundland Department of Mines and Energy. The Prospectors Resource Room was established to provide a permanent multi-use resource area for the local prospecting community. The Resource Room shall include reference collections of textbooks, ore samples, rocks, minerals and alteration types, as well as journals, magazines, published reports and maps. This resource facility, known as the "Matty Mitchell Room", is a joint government-industry-university supported endeavor which is housed at 50 Elizabeth Avenue. Its operation and development is overseen by a six-person committee consisting of representatives from the Mines Branch of the Department of Mines and Energy, the Newfoundland and Labrador Explorationists, the Newfoundland and Labrador Chamber of Mineral Resources, and the Department of Earth Sciences, Memorial University of Newfoundland. To date, the room has been equipped in part through donations of surplus Government furniture.

Upcoming Events

Northwest Mining Association Annual Meeting and Exposition

November 30 - December 4, 1998
Spokane, Washington

This conference offers many industry professionals the chance to gather and share technical information and view the latest products and services. NWMA pre-convention Short Courses allow for professionals to learn about the latest technological innovations in specific fields. For more information:

Tel: (509) 624-1158
Fax: (509) 623-1241
email: nwma@nwma.org

Cordilleran Roundup 1999

January 26-29, 1999
Vancouver, BC

The British Columbia and Yukon Chamber of Mines are once again hosting the largest mining exploration conference and trade show on the West Coast. This year's theme is "Where Discoveries Start". For more information please contact:

Bruce McKnight
Tel: (604) 689-5271
Fax: (604) 681-2363
e-mail: bkm@bv-mining-house.com

Prospectors and Developers Association of Canada Annual International Convention and Trade Show

March 14-17, 1999
Toronto, Ontario

This well-known, business-oriented convention focuses on the world's mineral exploration and development sector and includes a comprehensive technical program, large trade show, short courses, junior mining exhibits, international bookroom, and great social program. For more information:

Tel: (416) 362-1969
Fax: (416) 362-0101

CIM '99 Calgary

May 2-5, 1999
Calgary, Alberta

101st Annual General Meeting to be hosted by the Calgary Branch of CIM, and the 16th CIM Tradex will be held in Calgary, Alberta. For more information, please contact Chantel Murphy at:

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- ✓ Produces over a dozen mineral commodities
- ✓ Produces 55% of Canada's iron ore
- ✓ Access to tide-water and deep-water ports
- ✓ Comprehensive geoscientific database
- ✓ Skilled workforce and well-developed infrastructure and service industry
- ✓ Developing dimension stone industry
- ✓ Active geological survey group
- ✓ Newfoundland and Labrador boasts geological diversity and potential for further world-class discoveries



CHARLES J. FUREY
Minister



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Geochemistry, Geophysics & Terrain Sciences.....(709) 729-2171
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