

From the Mineral Inventory Files

Eastern Promises

Deposits of Li, Ta, Nb, Cs, Rb, Mo and Be are in vogue these days as society advances into an era of ever increasing environmental awareness. These elements are required in the manufacture of all the advanced batteries, magnets and other devices associated with non-gasoline burning automobiles, solar panels and other green energy technologies. As a result of these current and projected needs, the mineral exploration industry is searching the globe for new deposits in order to define reserves of these elements. Nova Scotia, rightfully so, is attracting its fair share of this exploration attention. There are exploration programs under way or planned on properties like the attractive Brazil Lake spodumene pegmatite (see v. 19, no. 2, Spring 2002), the East Kemptville Sn deposit and surrounding granites, and the numerous showings in the highly evolved granites around Port Mouton and New Ross.

All of the prospects cited above are in southwest Nova Scotia and many have been known for over a century. It is my opinion, however, that the eastern region of the Meguma Terrane, the area east of the St. Marys River, may also hold promise for rare metal deposits that equals that of the southwest. The eastern Meguma Terrane shares many geological features in common with the southwest, most notably a similar elevated regional metamorphic grade (amphibolite facies). Globally, rare metal pegmatite deposits tend to be preferentially formed within granitoids near the amphibolite-greenschist facies metamorphic boundary so it is no surprise that this association holds true in Nova Scotia. In addition, the east has its share of rare metal showings. One that is currently receiving attention comprises the Lower Caledonia Be pegmatites, with their spectacular concentrations of beryl (see v. 17, no. 4, Fall 2000). Other examples include the McMillan prospect near Country Harbour Mines (v. 26, no. 2, Spring 2009) and a small Ta-rich pegmatite outcropping on Highway #7 just north of Sherbrooke.

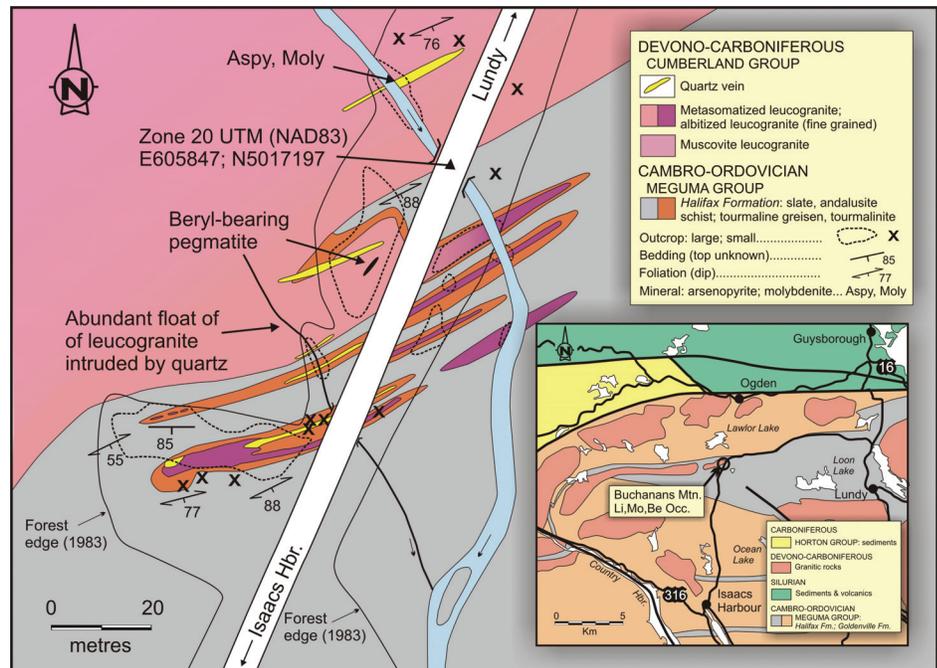


Figure 1. The Buchanans Mountain Li, Mo, Be Occurrence, Guysborough County.

Another prospect that I feel warrants special mention is the Buchanans Mountain Li, Mo, Be occurrence (Fig. 1). In 1981 Esso Resources Canada Limited discovered Mo-bearing leucogranite boulders along the newly constructed Eight Mile Lake lumber road that linked Isaacs Harbour and Lundy (inset on Fig. 1). Construction of this road permitted easy access to a large region of previously inaccessible wilderness. In 1982, geological mapping by the Department of Mines and Energy indicated a molybdenite-bearing quartz vein intruding a leucogranite outcrop where a stream draining Buchanans Mountain passes under the lumber road (Fig. 1). The following year I plane tabled the occurrence and found several very interesting features. Most notable were the presence of tourmaline greisen zones developed within the highly altered Halifax Formation slates that envelope several quartz veins and fine-grained albitite dykes (Fig. 1). It is also apparent that the albitized rocks are gradational with leucogranite, which progresses from a

typical pinkish, medium-grained, muscovite leucogranite through a lighter colored greisenized facies and into the finer grained albitite-rich facies. The tourmaline greisens are nothing short of spectacular. They grade from unaltered slate through slate speckled with euhedral tourmaline laths, which increase in abundance until they reach massive tourmalinite (>90% tourmaline) immediately adjacent to the leucogranite or quartz. As part of my examination I ran a suite of samples for major and trace element analysis and was surprised and pleased to find that most samples of the tourmaline alteration returned in the order of 0.2 % Li, 0.5% F, around 500 ppm Sn and, of course, between 1-2% B.

Well, in the early to mid 1980s nobody cared much about rare metal or Li deposits and this interesting showing was simply filed away and nearly forgotten. Times have changed and perhaps now this little-explored occurrence and others in the eastern Meguma Terrane will receive their just due

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