



# KOLA PENINSULA FIELD TRIP

by *Michael Skebo*

Like Mont Saint-Hilaire, the Khibiny massif in the Kola Peninsula is one of the world's premier collecting site for alkali minerals. I contacted GOM to let them know that their Canadian member would love to participate in the trip. Laszlo Horvath had given a summary of the type locality minerals from various alkali deposits around the world at Gilles Haineault's MSH collecting-dinner weekend the previous October. Unlike MSH where all of the minerals are in one quarry, the large number of Khibiny's minerals are scattered over hundred's of kilometres. That statement proved true during our trip to Russia.

On July 11<sup>th</sup>, I flew from Toronto via Finnair to Helsinki, Finland. I explored part of the city and caught up on some lost sleep. On the 13<sup>th</sup> I returned to the airport to meet my Italian friends. Marco Sturla, Claudio Seghezzi, Germano Fretti, Elvio Esposti, Adrio Bocci and Enrico Galli. As usual, they were all talking and walked right past me. I caught up with them. It was good to see my old friends again and one new one.

During the one hour trip to Roveniemi we flew through a rainstorm, heavy winds and a lot of cloud. The pilots did a great job landing the big jet but I was glad to be on terra firma again. We congratulated the pilot on our way out. We met our Russian driver who was to take us on an eight hour drive to Apatity the next day.

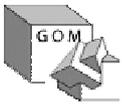
After a good meal and a great night's sleep, we met the van, packed and headed for Russia via Santa's Village. This is a real tourist attraction just outside of Roveniemi as it sits astride the Arctic Circle. We picked up a few souvenirs while our driver was shopping and then left for the long trip. Before crossing into Russia at Salle, we saw and photographed reindeer grazing beside the highway.

All went well at **Salla**, a very modern border between Finland and Russia. With the help of the driver and a few younger Russian guards, we filled out the requisite forms, had our luggage scanned and finally entered Russia.

The Kola is known to many people due to the "Murmansk Run" employed by the Allies in WWII. A warm ocean current flows through Arctic waters **greatly** affecting both climate and vegetation. In Canada's Arctic, tundra vegetation prevails whereas, in the Kola both deciduous and coniferous trees grow to 10 meters and taller. It impressed and surprised me simultaneously.

After a long drive over bumpy





highways we arrived at our hotel on 200km long **Lake Imandra**. The hotel was owned and run by the Geology Institute in Apatity. It is used to house visiting groups and other scientists interested in the apatite mines of Khibiny, the wealth of different minerals and its geological features. Our leaders were provided by Laplandia Minerals operating out of Apatity. They publish many geology, mineral books and papers. We were met by the leaders **Dr. Victor Yakovenchuk, Dr. Gregory Ivanyuk and Dr. Yakov Pakhomovsky**. They were to be our guides and mentors for the next twelve days. We met some members of their families as well as our translator **Anastasia Nakhshina**.

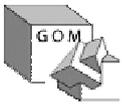
Our first collecting day was July 15<sup>th</sup>. We left the hotel in two old army jeeps that comfortably hold seven people plus the driver. Our driver, Yakov Pakhomovsky, was a co-author of the book "**Khibiny**" as well as its English translator. Yakov, who taught himself how to speak, read and write English, was a font of information about the history of Apatity, the geology and of course mineralogy of the area. He turned out to be a great personality and talker.

As we headed for the first collecting spot, the front brake seized on the jeep. Yakov fixed that and we drove another few kilometers before the left rear tire fell off. Some young kids had obviously been having fun the previous evening. The tire was fixed and that was the end of the problems.

The Khibiny massif is a "1327km<sup>2</sup> deposit of nepheline syenite, melteigite-urtite and apatite-nepheline rocks." (Yakovenchuk et al 2005) The number of mineral species stands at ~470 while 88 are type locality minerals. The massif is a horseshoe-shaped plateau rising to ~1000m above the low lying landscape. We were headed to the **East Mine Complex**. Our first stop was **Mt. Eveslogchorr** and the type locality fersmanite. Yakov drove the truck over the small Vuonnemyok River and parked close to the collecting site. We didn't fare too well until a return visit in the afternoon when Yakov and Victor showed us exactly where to collect. We found a number of yellowish-brown crystals of fersmanite, a rare silicate of Ca, Na, Ti and Nb. The vein was discovered in 1922 and there is still material to collect. Not many visitors here. Other minerals here were astrophyllite, eudialyte, microcline and nepheline.

In the afternoon, we decided to hike to another deposit to collect astrophyllite...I was not ready for this. I wasn't familiar with the technique of hiking and climbing in the mountains, but with the able assistance of Marco, Claudio and Germano, a veteran world-class climber, I slowly learned. Adrio and I decided to return to the first site where found some nice fersmanite minerals before the group returned. We also met geology students from





St. Petersburg who insisted we have some tea and biscuits with them. Somehow my tea turned out to be vodka and the biscuits, a small cucumber. Welcome to Russia! We returned to our superb accommodations and a great dinner.

The next day, Sunday the 16<sup>th</sup> of July we went to **Mt. Marchenko** outside of the town of Kirovsk. The landscape was filled with cirques, u-shaped valleys as well as remnant snow fields. We climbed about 100m. up a v-shaped drainage area filled with fresh rock replenished yearly by the spring runoff. Eudialyte crystals were in abundance here as well as brown zircon, aegirine, microcline, ancylite-(Ce), natrolite, lorenzenite, sodalite, and sphalerite.

In the afternoon, we moved farther up the mountain and to our right. Panic time for me. The rock was loose along with gravel and some moss. I was petrified climbing this 30 degree slope. We were to collect blue anatase and brown zircons. I eventually made it to the location even though the nine year old kids ran up the mountain. I felt my age. At one point, I sat down and couldn't see the base of the mountain. Claudio walked behind me and provided encouragement. It turned out to be Victor and Germano's day as they found at least 1.5 cm zircons. The rest of us found 0.8 mm zircons that popped out of the matrix of rischorrite. I found the blue anatase as well. The crystals are almost like a druze on the feldspar and it is difficult to see the individual crystals unless they are not fused. Anastasia, our translator found my best sample. The rest of the group, children included, opted to climb to the top of the mountain. Coming down was easier than I expected; we just dug our heels in and slid down the mountain. Neat!!!

The next day, Monday, we set out for **Mt. Kaskasnyunchorr**, a natrolite-aegirine-microcline-albite vein in foyaite. We were looking mangan-neptunite. From our van it was a one kilometer uphill walk and then another 300m. climb to the site. I enjoyed the challenge. This site is near the location where the old Soviet government detonated two nuclear explosions deep underground to see if they could expedite the mining process. It failed.

While looking for the mangan-neptunite, Marco "dinged" his finger with the hammer. He informed me that he was now impaired and that the rest of us would find better material as a result. Again, some of the group struggled up another 50m where they glimpsed last years snow fields while we kept looking for mangan-neptunite. We were so involved looking for the one species that we forgot about the aegirine, albite, analcime, epididymite, loparite-(Ce), etc. This happened quite often during the trip. We walked back down the boulder field, across the meadows





and down the rest of the mountain where Gregory had placed cans of beer in a stream to chill. It was really cold and hit the spot. A few of the younger men went swimming in a small pool of mountain water that was “bloody cold”. The GOM guys declined the offer to join them. Each day was a round trip of at least 150km to 300km. Laszlo’s comments were ringing in my ears.

Tuesday, it was back to the main mining complex, specifically **Mt. Njorpakhk**. Which was another 140km drive through the town of Apatity and past the older town of Kirovsk. The Russian towns are filled with the ubiquitous apartment complexes. Stores, restaurants, etc were often found on the main floor. No shopping plazas yet, but things are gradually changing as the infrastructure improves. The open pit mine of Njorpakhk provided us with impressive photos from above but it started to rain. On the way Yakov told us about the difference between the old and new regimes and what it meant to him personally. It was quite interesting.

At Njorpakhk, Marco told me it wasn’t to be a micro day. With the rain pouring down, it was a restful day for me. There was lamprophyllite and labuntsovite to be collected in the afternoon. The labuntsovite was very friable and impressive in situ, but disintegrated after some hammering. A deep vug would have been great to find especially lined with labuntsovite. Some of the group relaxed in the jeep listening to classical music while Germano displayed his dancing skills in front of the jeeps. We eventually retreated to the hotel and a Russian sauna.

We left on the 19<sup>th</sup> for the **Lovozero** massif ...a 300km roundtrip. This is another alkali deposit with a large list of mineral species to its credit. We took only one jeep and Victor’s car. It was cloudy, windy and wet just like the previous day. We came to our first stop near one of the old mines. I found korobitsynite at noon, the conclusion of our collecting time at the site. After lunch we retraced our steps down the road only to find two or three large cement barriers at the entrance to the pegmatite site. This did not deter our Russian friends. They grabbed two shovels and dug a path into the bush so that the jeep could drive around the barriers.

There were two small pits at the pegmatite site where we found a lot of interesting crystals, including belovite-(Ce) and mormonite. We don’t know what the other material is yet. This is a winter project. We didn’t stay long as everyone was feeling the cold and dampness.

We awakened early on the 20<sup>th</sup> to get a head start to the **Kovdor Iron Mine** (140km away).

With snow on the Khibiny as we left, our early start was for naught as Victor’s jeep had



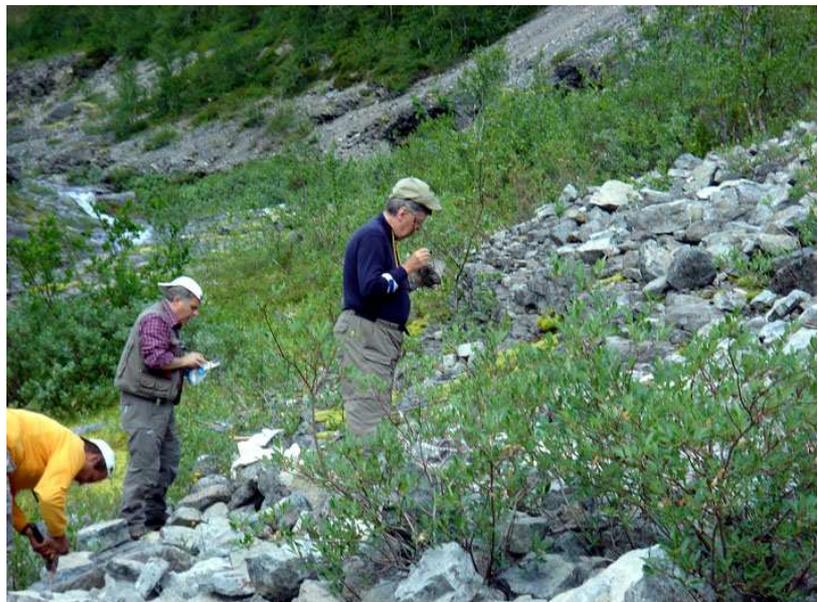
fan belt problems which were overcome in due time. While we waited, Yakov gave us a biology lesson on the wild plants near the highway where we consumed a considerable amount of wild blueberries. When we arrived in the town of Kovdor, after listening to Italian songs in Bergamasch, it was pouring rain. I don't think the singing had anything to do with the weather, but you never know. We made for the Phlogopite Mine which was primarily mica (enormous crystals), forsterite and richterite. I found a 2cm. crystal of clinohumite which I talked Victor into accepting for his collection. After that I was inundated with Russian minerals. The afternoon saw us in the bottom of the huge Kovdor Iron Mine. We just started to collect when a formidable downpour hit adding about 1m of water to the floor of the mine. The jeeps were moved to higher ground while we danced around on the rocks to avoid the water. We found bobierrite, collinsite, calcite, kovdorskite, magnetite and zircon even under these challenging conditions. Yakov found a superb crystal of zircon.



We retired to a local restaurant to eat with a member of the hierarchy of the Iron Mine. The actual head of the mine and member of the Russian parliament showed up to greet us. It was an interesting meal and discussion via Nastya. I felt there was a glimpse of old time Soviet Russia there. An enlightening evening to say the least.

Our second last trip was to another smaller massif named **Africanda**. Perowskite was what we were looking for and we were not disappointed. It was a small pit and a relaxing dig. I was tired and I think others were as well. We collected magnetite, calcite and titanite along perowskite. It started to rain so we headed for the hotel. On our return

to the hotel, I learned that the guys were bringing a rock cracker from the labs. I wish I had known this earlier. There would have been many more excellent crystals to bring home instead of trying to eliminate some of the excess matrix and unfortunately the crystal as well.



On our final collecting day, we went to **Mt. Eveslogchorr** again. We were looking for wadeite, a pink

crystal of K, Zr, Si, O. The vugs were plentiful but didn't always yield the prized pink crystals. I found a rather large number of wadeite micro samples. Yakov found berylite and he gave me a few samples, one of which I gave to Marco under threat of bodily harm. This was also the last climb of the trip where I finally felt comfortable climbing. Marco and Germano helped with real valuable tips. The weather was overcast and a cold wind blew down the valley. A few of the group climbed another 100m to collect excellent sprays of astrophyllite. We slid down the mountain with a group of Russian geography students from Moscow State University. They loved to try their English on me and they spoke well.

The last two days of the trip were spent organizing our material and packing as well as taking photos of mines in which we did not collect. The **Kirovsk apatite** mine was quite unique. We did take a number of great photos. We visited a botanical garden and greenhouses outside of Kirovsk.

The trip was quite an experience for me. I met interesting, knowledgeable people who are really no different in their daily lives than those of us in Europe or Canada. They wish to have their lives fulfilled the same way we do. The Russian leaders went out of their way to make our trip a success. The collecting was excellent, accommodations superb and the comraderie even better. We drove over 2500km during the time in Russia. The food was excellent including Marco and Elvio's spaghetti made after collecting at Eveslogchorr. Les Horvath was right, it is not like collecting at MSH.



We awoke very early for the long trip back to Finland. We said our goodbyes to Victor, Gregory, Yakov, Anastasia and Viya. We retraced our 'steps' to Helsinki where we 'played' tourists taking photos, visiting churches, relaxing in cafes, listening to street musicians and generally enjoying the city of Helsinki.

On July 27<sup>th</sup> we took off for the airport in the afternoon to return home to our different destinations. A great trip was had by all.

