

## Searching for the Ancient Great Tundra

Part 2: From the Royal BC Museum to far eastern Russia

By Sue Stackhouse

**F**ive flat tires is apparently a low score for the rough 2,400 km round trip from Magadan to Ust Nera, Yakutia. The scenery alternates between wild taiga and tundra and views of the mining of placer gold deposits across valley bottoms.

But Richard Hebda and Ken Marr, natural history curators at the Royal BC Museum, were seeking another type of treasure – plant samples of the region and the travel journal held in their DNA. Their analysis should help determine if British Columbia played a key role as a source of tundra plants in the northern hemisphere, potentially reversing the idea that BC received most of its post ice-age flora and fauna from elsewhere.

The 10-day trip in July–August, 2011 was their second to Russia, and they had excellent Russian companions. The target this time was part of eastern Beringia, a known ice-free region during the last glacial advance, roughly 17,000 to 14,000 years ago. Meals were cooked on open fires and included canned meat and the unique taste of Iris brand “Chardonnay-flavoured Beer.” The air was smoky-brown from widespread forest fires, but huge mosquitoes still found and feasted on Ken’s foot as he washed in an icy stream.

On this field trip, Ken and Richard collected roughly 300 tissue samples and 98 botanical vouchers of their target species as

well as other species for researchers in Ireland, Alaska, Colorado and Washington. DNA analyses have been completed for samples of mountain sorrel collected from both North America and Russia. To their great surprise, their hunch was correct. The geographic distribution of its genetic types is consistent with a last glaciation refugium in northern BC. DNA analysis is now underway for the Russian samples of alpine bistort, sibalidia, Altai fescue and White Mountain heather.

The original innovation grant provided critical research material, which led to more international collaboration and an additional source of funding. This investment allowed Richard and Ken to see that their Great Tundra idea has merit and that this ground-breaking research at the Royal BC Museum should continue as more funding becomes available.

*Richard Hebda is Curator of Botany and Earth History; Ken Marr is Curator of Botany.*

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A tasty meal cooked on open fire ...



... which included canned meat.



Mosquitoes feasting on Ken's foot.