

Journal of a PhD student in the north-eastern Siberia



Day 1: The camp

My eyes are wide open even if I have slept only a few hours the last 3 days. I cannot take them off from the extraordinary passing landscape as we progressively go up the meanders of the Bereleg river. After 2 hours, a blue tent and few houses emerge from the horizon: Here it is! The camp where I will live 1 month, lost between water and land.



Day 2: 1st Excursion



It's with excitement that the team is preparing for our first excursion, an anti-mosquito hat and net, an anti-mosquito spray, some anti-mosquito trousers, an anti-mosquito shirt, a windproof jacket and rubber boots. As a first glimpse tundra is a flat area, but as soon as we started to walk we could feel the highly bumpy topography created by the vegetation. It's at a small scale that we can discover the incredible diversity of the flora in such a harsh environment where the growing season only last about 2 months! Gabriela, a researcher involved in

this site for few years show us the different plants, lichens and mosses with passion. We also tested for the 1st time but not for the last time the key tool of this field campaign: the active layer stick. Utilization is simple, you just have to plant the stick in the soil until it hits the icy ground: the permafrost. Around 15 to 20 cm of the soil is unfrozen and therefore allows the establishment of roots and microbial activity. It's such a weird impression to feel the ice below and to realize that this ice is present all around for thousands kilometres!

Day 4: Fishing

The Bereleg is overflowed and Nikita and his friend have set nets to provide fresh fish to Ana our cook. Luckily with Ariane we had the chance to go with Nikita to get the nets out of the water. The nets are floating thanks to plastic bottles and due to the current of the river, big fishes entangle in the nets. With 5 nets we caught 12 fishes composed of pikes (schuka) and broad whitefish (Chir).



Day 8: The moody stove

The wind comes from the north, we are covered with our sleeping bag, it's 12°C inside the tent. We decide it's time to turn on the oil stove to get a more suitable temperature for working. 1st challenge, light the Russian matches. We pump a bit of oil and it starts to burn when we suddenly heard a deep rumble. Is that a bear? No, it's our stove. It continued with scary roaring until it got tired and then started to cough a smelly greyish smoke. One piece of the chimney exploded against the wall and we quickly turned off the oil inlet. Our stove doesn't like wind; our stove doesn't like cold. It worked only during sunny days and continued to complain about its situation with his deep rumble.

Day 11: the hard sampling: part 1



After spending the first week to select 20 ponds, I am ready for the main work of my field campaign: The sampling of all these ponds. I am collecting filtrated water to analyse its carbon content, and filters to analyse which bacteria live in these ponds. Today is a windy day so we are not annoyed by mosquitos on the way. The ponds are located 2.5 km from the camp, not far you may say, but as walking in the tundra is an everyday challenge, we need 45 minutes to 1 hour to reach them. I am organizing a "field laboratory" on a towel and

start to filter the water. I flame the forceps to collect the filter, I open the filtration tower to collect the filter, I catch the filter with the forceps and... the wind blows my filter away. I need to start all over again.

Day 13: the hard sampling: part 2

Today is a sunny, windless day! Hurrah my filters will not be blown away. However, we need protection against mosquitos: the hat, the net, the trousers and the mosquito-proof shirt. I install the filtration tower, the filter, pour water and start to pump. I flame the forceps, open the tower, collect the filter and... in a fraction of second already 4 mosquitos landed on my filters! Why is that a problem? Because I will extract DNA from these filters and I am more interested on aquatic bacteria rather than on the bacteria presents on mosquitos' legs! I am laughing, every simple laboratory operation becomes a hard task involving attention.



Day 15: The feast



Today we are celebrating the last field campaign of a Dutch researcher that came to Kytalyk every year for 14 years! For this occasion, we are preparing exceptional food in the camp: shashlik: grilled cubes of meat, potatoes, raw fish prepared with garlic and something very amazing: Fruits! Fruits and vegetables in general are expensive in arctic because almost nothing grows due to the permafrost. Locals therefore have to import everything by plane. I never enjoyed so

much an apple! We continued the feast until late in the night – if we can call it night because at this latitude the sun is shining 24 hours a day – and had cultural exchange by singing popular songs from the Sakha Republic, Russia, Switzerland, Netherlands and France.

Day 17: The Pingo

We were very excited when Sergei proposed us to roam with the small rubber boat to the “pingo” on the other side of the river. A pingo is a mount made of ice covered by soil, typical of arctic zones covered by permafrost. The boat was small but we fitted at 4. Sergei brought us through the shrubs until we felt the strong smell of gases such as methane coming out from the mud. We landed covered by mosquitos and start to walk in the mud. Each step was punctuated with laughs and “I am stuck!” After few falls and almost a boot left in the mud, we made it to the top of the pingo. It was worth full, we had an amazing view on the river meanders, the camp and the overall tundra.



Day 20: The fear

For my last week in the field, I planned to assess the vegetation surrounding the ponds I am studying. Indeed, I read recently that half or more of bacteria presents in arctic ponds are coming from the surrounding soil. Vegetation and microbial communities can be tightly linked so I thought vegetation may be a good comparison criterion. Equipped with a quadrat and the book of the region vegetation, we reached with Tamara the ponds behind the ridge. At some point we realized something was moving a bit further, on the other side of a big lake. The tundra is treeless which allows anyone to see very far. We started to guess what it could be:

- “- I think there are 2 trucks
- It looks very big, there must be a lot of people
- A military operation?
- Or maybe mammoths’ hunters!”

Mammoths’ hunters are looking for the rests of frozen mammoths to collect their tusks and make jewellery with. This activity can be illegal and it can therefore be dangerous to meet them in the tundra.

- “- Then let’s hide so they don’t see us!
- Remove your red jacket, they could see us!
- Let’s finish quickly...”



We did the faster vegetation assessment in the history of plant biologists and ran to Sergei to report what we saw. He climbed the ridge, looked through his goggles toward the direction we indicated and turned to us with a smiley face.

- “- It’s the new fisherman camp. “

Day 24: The departure

I cannot believe the month is already over but I am also happy to return to civilisation and comfort. We have no idea at what time Vanya the ranger will pick us up so we prepared everything in advance. We cleaned the tent, took down the chimney brought our luggage near to the kitchen. We did a last walk among the vegetation, looking at leaves already becoming orange and red. Autumn comes early in Kytalyk. A last breath of this fresh air, a last mosquito bite and we already hear the boat gliding through the meanders. With our 3 trousers, 4 shirts + jacket and hat, we are ready to take a 2 hours float trip back to Chokurdakh.



до свидания !