

# THE EXPLORERS JOURNAL

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## *Deep Freeze*

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**DALE ANDERSEN**

*ancient life beneath the ice*

**MIKAEL STRANDBERG**

*Siberia's frozen frontier*

**FELICITY ASTON**

*Antarctic destiny*





## deep freeze



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## *editor's note*

# INTO THE DEEP FREEZE

As an organization born out of a passion for the polar regions, we are drawn to Earth's coldest places, returning there time and again in a quest to unlock the secrets of these seemingly inhospitable worlds. For this issue, we catch up with Flag #176 carrier Dale Andersen, a planetary biologist at the Carl Sagan Center for the Study of Life in the Universe (SETI Institute), who has been diving in the freshwater lakes of Antarctica. There, primordial life-forms persist beneath the ice, providing a window on how life evolved following Earth's formation some 4.54 billion years ago and clues to what sort of organisms might be found elsewhere in the universe. Meanwhile, contributing editor Nick Smith enjoys a spirited discussion with Felicity Aston, who after spending three years living and working as a meteorologist with the British Antarctic Survey, became, in 2012, the first woman to ski across the White Continent alone.

Earth's coldest temperatures are not confined to the polar regions, as we learn from Mikael Strandberg, who takes us along on a journey through the Siberian taiga, where the age-old life-ways of the Eveny reindeer herders endure, but likely not for long. His expedition began 100 kilometers south of Oymyakon, where, on February 6, 1933, a temperature of  $-67.7^{\circ}\text{C}$  ( $-90^{\circ}\text{F}$ ) was recorded at the local weather station. Temperatures along his route were a bit more balmy, varying between  $-35^{\circ}$  and  $-58^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$  and  $-72^{\circ}\text{F}$ ).

Closer to home, Patrick Druckenmiller and his Flag #100 team have been examining 70-million-year-old rocks exposed on Alaska's North Slope. They have yielded a rich trove of dinosaur remains high above the Arctic Circle, prompting a major rethink of our presumptions regarding the behavior of reptiles and their heat-seeking nature.

We suggest that you don your mukluks and prepare for a chilly read!

ANGELA M.H. SCHUSTER, Editor-in-Chief



POLAR LEGENDS ROBERT E. PEARY  
ERNEST H. SHACKLETON ATTEND  
THE EXPLORERS CLUB ANNUAL DINNER  
MARCH 29, 1912.



# TRAVERSING THE FROZEN FRONTIER



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text and images by MIKAEL STRANDBERG

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A fellow of The Explorers Club since 2003, Mikael Strandberg has cycled more than 90,000 kilometers over the past nine years. He has explored Patagonia by horse; lived with the Maasai in East Africa; spent a year in Kolyma, Siberia, one of the coldest inhabited places on Earth; and traveled in extreme heat in Yemen. He would like to thank his team: Yura Stepanovich Bereshnev (cameraman), Egor Petrovich Makarov (organizer), and Bolot Bochkarev (translator); and Eveny reindeer herders Slava Sergovich, Tolya Andreyev, Vika Andreyeva, and Yura Grigorovich.







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"Ah, don't worry. I've put some dog fat on, so it will soon go away," Yura Grigorovich told me, after I pointed out that the cold sores on both of his cheeks were bleeding. "Normal-na!"

But it wasn't normal even for Yura and his fellow Eveny reindeer herders—Tolya; Slava, the leader of the pack; and Slava's wife, Vika. They were to take me and my three Sakha-based team members—Egor, Yura, and Bolot—600 kilometers south from the village of Uchugay in Yakutia, to the sea of Okhotsk. We had at our disposal 35 reindeer and 16 wood sledges to pull almost 1,000 kilos of food, fuel, and equipment. Our passage along a centuries-old trading route through the coldest inhabited region on Earth would take 50 days.

The herders, who come from the village of Arkah, one of the last stops on our route, have spent the past two months in Uchugay awaiting our arrival. The average winter temperature here is  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ), but it often dips below  $-60^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$ ) as it has for several weeks, making it difficult for the reindeer to graze. Permafrost in the area is more than a kilometer deep and for most of the year, daylight is little more than a faint glow on the noonday horizon, while howling winds exceeding 90 kilometers per hour roar across the snowy landscape.

It was the end of January and the thermometer read  $-58^{\circ}\text{C}$  ( $-72^{\circ}\text{F}$ ). At that temperature, mercury freezes solid and brandy becomes the consistency of syrup. It is so cold that trees explode, blue sparks fly from falling timber, and when someone exhales, their breath is transformed into a shower of ice crystals, followed by a tinkling sound referred to as "the whispers of the stars." One must move continuously to prevent becoming dangerously cold. After half an hour of inactivity, I could feel both my cheeks burning and knew the frostbite I had experienced during my time in Kolyma to the east nearly a decade ago had returned.

It was then that I realized the two months of preparation for this trip—coming on the heels of an expedition to Yemen, where temperatures







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## REINDEER TRAIN

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At midday early the expedition, the temperature was close to  $-60^{\circ}\text{C}$ , making for an extremely cold ride at the back of the sledge. We stopped often to rearrange equipment and to allow the herders to smoke and the reindeer to rest.





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## TAIGA TRAVERSE

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Yura Grigorovich drives the reindeer train through the dense taiga along a centuries-old trading route from Uchugay to the Sea of Okhotsk.





were in excess of 53°C (128°F)—was insufficient. But when the opportunity to produce a documentary for Outwild Television presented itself, I simply could not refuse.

In addition to pulling together all the research in a brief amount of time, I began training vigorously and eating like crazy to put on excess weight. I drank copious amounts of olive oil every morning and ate large portions of food like kebab, garlic sauce, and chips. In a mere two months I was able to put on 13 kilos of extra weight. Once in Sakha, I put on another 5 kilos in two weeks.

We spent three days in Uchugay, packing in preparation for what would prove to be a brutal yet beautiful journey.

Once underway, we were able to travel for only 3 or 4 hours each day, due to the time it took to corral the reindeer, break camp, and pack the sledges. Setting up camp each afternoon entailed clearing an area of snow, felling trees, chopping firewood—primarily larch—and collecting branches to make a thick floor mat to keep the cold at bay beneath the tents, tasks that took several hours. The exertion provided a welcome respite from the cold. Once the campfire was ignited, Yura would toss a shot of vodka into the flames, an offering to the spirits believed to govern this part of the world.

Much to my dismay, the fur kit Egor had been kind enough to order for me a month earlier was designed for the open tundra rather than the taiga through which we were traveling. The coat turned out to be too big and heavy while my reindeer hide boots, which were lined with grass, were too short for the deep snow and their fur soles too slippery to negotiate the many ice crossings. The rig, however, did provide ample cause for laughter on the part of the Evenys. It was also clear that the tent we had bought at the Chinese market in Yakutsk was ill-suited for these temperatures, as was the wood stove, which required constant stoking throughout the night. Getting a good night's sleep proved to be difficult but the surroundings were so spectacular that one easily forgot such discomforts!



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After a week of travel, we reached the border between the regions of Sakha and Khabarovsk, which was marked by an ice-covered fence in an open valley surrounded by majestic mountains. A light wind came up, sending the real-feel temperatures plummeting to what seemed like the coldest moment on the trip. Despite unbearable pain in my body, I felt privileged. During my 27 years of exploring and traveling, I have never come across a landscape so exquisite. It was a scene from a fairytale, the deep snow and ice crystals glistening like diamonds. The extreme cold brought out colors I had never seen before.

Ahead, a steep grade led up to a 1,500-meter mountain pass, which marked the half-way point in our journey and a dramatic change in landscape. As we began our descent into the Khabarovsk Krai, the temperature began to rise to a balmy  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ).

For the next three days we moved at quick pace due to the warmer climate, arriving Turten, a reindeer camp 250 kilometers from Uchugay, where Vika's family lives for most of the year. Her parents run the camp and I learned shortly after our arrival that her sister, Ludmilla, who also happened to be Yura's wife, was eight months pregnant. We ended up staying four days in this little paradise largely to arrange Ludmilla's transport by helicopter to Khabarovsk, where there was a hospital, and to acquire five more reindeer as the expedition had been far more demanding than anticipated. The travel delay afforded me time to chat with many of the herders, including Piotr, Vika's father. "My only wish is that we can continue this life for many years to come," he told me, adding that, unfortunately, fewer and fewer Eveny—who number about 30,000—value the traditional ways.

After saying good-bye, we pressed on. For two weeks, we negotiated perilous ice crossings and stretches of open water along our route. Falling through the ice is a common way to die in the taiga. Many herders had lost family members this way.







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## A PASS ON THE HORIZON

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The expedition approaches a high pass before descending into the Khabarovsk Krai.





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## A VANISHING WORLD

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During the Soviet period, the government offered subsidies to entice indigenous peoples to settle in villages and enjoy the benefits of civilization. In recent years, these subsidies have been curtailed, leaving many in a cultural limbo.





The going proved challenging for our reindeer as the high winds had blown away all snow cover and the ice was extremely slippery. Yet they persevered. As we made our way south, fluctuations in weather wrought by warmer air coming in from the Sea of Okhotsk created layers of hard snowpack that was nearly as hard and dangerous to ply as the ice.

After 50 days of traveling, we arrived in the picturesque village of Arkah. Slava, Tolya, Yura, and Vika were happy to return to their part of the world. The reindeer also seemed to be far more at ease. Major changes in surroundings present problems for the animals and can cause death due to distress. Yet movement is crucial to prevent overgrazing.

The homecoming proved to be bittersweet. There is no doubt that this traditional way of life is under threat. During the Soviet era, the government provided subsidies to encourage indigenous peoples to settle in villages, attend schools, and enjoy the conveniences of the modern world. In recent years, however, these "benefits of civilization" have been dramatically curtailed, leaving many Eveny in a cultural limbo. While those who remember how to hunt and fish to survive have found solace in the skills that they had mastered over the millennia, returning to traditional ways is not an option as heavy industry in the form of mining and energy have begun to encroach on their landscape.

Shortly after our arrival in Arkah, Vika remarked, "It smells awful here and the water is bad. I want to go back to the taiga where everything is healthy and clean." Tolya told me as he began to chop a year's worth of firewood for his family, that once he is done, he plans to return to the taiga.

I decided that Arkah was the end of our expedition. From here it would be another 120 kilometers along an ice road to the Sea of Okhotsk, where there would be little in terms of food for the reindeer. And I was not doing this to set any records, but to document a unique lifestyle in the most beautiful winter landscape on Earth. ▲▼