



Q&A Jeffrey Nytech

Composer of deep time

For the 125th anniversary of the Geological Society of America, the Colorado-based musician Jeffrey Nytech has composed a symphony celebrating the geology of the American Rocky Mountains. He talks about *Formations*, which will be premiered by the Boulder Philharmonic Orchestra on 7 September.

How did you become interested in geology?

I actually studied geology and music. I wrote a piece at university that was directly inspired by geology. I looked at mass-spectrometry profiles of different minerals and created an arbitrary formula to transfer their resonance frequencies into the audible spectrum. I don't think it was a very good piece, but it was my first foray into trying to join the two things together. For me, art and science are both trying to do the same thing: understand the world and our place in it. Whether we're talking about that in a metaphorical or a concrete sense, I think they're both after the same basic thing.

How did the commission for *Formations* arise?

This was my crazy idea. I went to a community seminar about the geology of the Rocky Mountains, and I heard that the Geological Society of America [GSA], based in Boulder,

Colorado, was having its 125th anniversary this year. The light just went on for me. I went to the Boulder Philharmonic and said, "You should commission a symphony from me, inspired by the geology of the West". And the GSA funded it. They had been looking for some keystone event to tie their celebration together, and for them this was totally out of the box.

How did you shape *Formations*?

The orchestra wanted it to be about 25 minutes long, and it immediately became clear that I couldn't capture the whole geological story. I had to step back and say, "What are some key episodes that would make good music?" I began at the beginning, with the early Precambrian eon [between 4,600 million and 542 million years ago]. And the end needed to be something pretty grand, so I picked the orogenies [mountain-forming episodes] that built the modern Rockies. I

then had the two bookends, but what comes in the middle is sometimes the trickiest part. I wanted to weave human stories into it, and that was when I decided that the two that relate directly to geology are the gold and silver rushes of the nineteenth century, and oil and gas drilling in the twentieth century. That's when the two middle movements began to take shape.

Are there common musical themes that run through the movements?

There is a motif associated with uplift, and a motif associated with Precambrian rock that keeps transforming in many different ways as it is eroded again and again. I wanted to try to create musical narratives that were more about how the rocks formed.

How do you convey geological deep time through music?

The bad news is that the time spans we're talking about are so vast that we can't even begin to wrap our brains around them. The good news is that music is a kind of metaphor for that, because unlike a painting, it unfolds in time. I try to use long musical gestures to reflect long expanses of time. I'm trying to guide the listener towards a broad sense of how things formed. When you look at a geological formation, you're seeing it as it exists now — as a snapshot in time. But you also see all the time that was required to form it, the uplift and erosion and everything else — time compressed into this single instant. And so I think that's why I can get away with it in music: I can tell the story in 25 minutes.

What were the hardest parts to put to music?

Volcanoes are hard. I had to try to create the energy behind a volcanic eruption, as opposed to depicting the spewing of something. But the hardest aspects to portray were the gold and silver rushes. In the end I resorted to some tricks. In one section I wanted to depict the miners panning for gold, so I created a miner's pan with rocks that rattle around in it. And in hydrothermal intrusions, water comes bubbling up to the Earth's surface, so I'll have all of the brass section blow through their instruments to make a whooshing sound.

What do you hope people who don't live near the Rockies might get from your work?

The story of our evolving planet is a universal one, and I hope it will inspire people to think about how that story fits in with where they live. Ultimately, this is about trying to give Earth a voice. Earth has told us the story of how it formed: it's in the rocks. *Formations* is about trying to interpret that in a language we can understand. ■

INTERVIEW BY ALEXANDRA WITZ