Rock-eating Mycorrhizal Fungi: where, why, how and how fast? (S07-vanbreemen030422-Oral)

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Abstract:

The discovery of 0.005- 0.01 mm wide cylindrical tunnels in feldspar grains in podzol E horizons has raised a number of questions about their nature and occurrence. The tunnels have a strongly biogenic appearance, and are most likely formed by fungal hypha as a result of exudation of complexing organic acids. The tunnels have been observed in many, but not all, podzols associated with coniferous and ericaceous plants. Chrono- and toposequence studies in North America and Sweden show that their abundance has increased exponentially or sigmoidally over the past 5-8 millennia from zero initially to values that seem to be higher as the nutrient status of the soil decreases. All evidence supports an ectomycorrhizal origin of the tunnels. Whether or not they are functional for the plant-fungus symbiosis, and if so, what stimulates their formation, is as yet unclear. During the presentation, we will present the results of ongoing research, including any new data about the proportion of fungal to total weathering.

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weathering, mycorrhizal fungi, podzols, rate of soil formation