Sipping on Crystals

Amelia Groom

Three hundred metres below the surface of the Sierra de Naica Mountain in Chihuahua, Mexico. Just a few hours south of the Rio Grande, the (old, flowing and meandering) river that has been perversely tasked with marking the (recent but ostensibly immutable) border between the US and Mexico. This is where the Cueva de los cristales ('Cave of Crystals') was stumbled upon by a group of miners in the year 2000. While looking for new ore deposits, they found an underground cavity full of giant pillars of selenite—a translucent, milky white crystal whose name comes from the Greek word for moon.

These gleaming moon crystals had been growing, undisturbed, in their private subterranean chamber for hundreds of thousands of years. They are among the largest known natural crystal formations on the planet; some of the pillars are more than eleven metres long. Check out the images online. The incredible immensity of the crystals is the result of a rare combination of conditions: a constant supply of groundwater rich in dissolved calcium sulfate, a lot of time, and plenty of warmth.

We might usually associate heat with disintegration and coldness with rigidity, but selenite—which is a form of gypsum—has the unusual property of 'retrograde solubility', meaning that it becomes less soluble as temperatures rise. Before the underground caves of Naica Mountain were drained by the mining company, the waters that flowed through them were heated by the magma that lies underneath the mountain. When the company pumped all the water out from the mountain's caves, in order to probe their depths, the crystals lost the conditions they needed for continual growth—and as they were exposed to air and cooler temperatures, they began to erode and crumble.

This is, of course, not the first time in history that the "discovery" of something by the probes of industry and science coincided with that thing's death. When mining operations in the mountain ceased several years later, the cave was re-flooded, and the crystals were allowed to keep growing. Crystals are like this: they might look like finished forms—indexes of a geological deep-time past—but they can actually be thought of as works-in-progress; if they are returned to the right conditions, they will continue to slowly grow.

Most of the gypsum on Earth was formed by the withdrawal of old seas. This planet was once covered in ocean, and as the flowing waters began to recede (giving way to the emergence of previously submerged solid land masses), they left mineral deposits in their wake—including gypsum, an 'evaporite' that forms when salty seawaters dry up and leave thick beds of sedimentary rock behind.

As a product of oceanic evaporation, gypsum/selenite has not forgotten its aqueous past. It's composed of calcium sulphate and ... water. Water of crystallisation; water in hard, dry form. The chemical composition of gypsum is $CaSO_4 2H_2O$: the water is chemically bonded into a crystal structure, making up almost fifty percent of the volume in a solid piece of gypsum (or twenty percent of the weight). When it's subjected to temperatures higher than 100 degrees Celsius, gypsum will start to release its inner waters as steam.

So it's a form of rock that sweats before it burns, and for this reason, gypsum offers a fire-resistive barrier in building materials. You might be surrounded by this evaporated ocean rock right now: it's the primary substance in drywall (also known as sheetrock, plasterboard, wallboard, and gypsum panel, among other names), which is commonly used for interior walls and ceilings. While its latent wetness makes it good for fire protection, gypsum drywall cannot be used on exteriors, because it's too vulnerable to moisture. Along with other evaporite minerals—think of table salt—gypsum possesses a degree of water solubility. When it gets wet, its form will start to destabilise—as if it's eager to return to its oceanic origins.

The use of gypsum in building construction goes back to the ancient Egyptians, who made plaster by grinding gypsum rock down to a fine powder while evaporating its water content, and then adding water to the powder to make a liquid that can be re-solidified in any assigned form. This is still how casting/moulding plaster is made today: gypsum is the material basis of Plaster of Paris. Gypsum is also used in soil fertilizers, concrete, and many drugs and cosmetics. It's in splints for broken limbs and it's the basis of sidewalk and blackboard chalks. It's a component of concrete, and Old Hollywood

used gypsum flakes for fake snow. In selenite form, it's popular in crystal healing, and practitioners associate selenite crystals with a capacity to clear and reset the energy in people and things, including other crystals. It's also frequently used in various beer brewing techniques, to increase the permanent hardness of mineral-deficient brewing water, to balance the pH levels, and to enhance the bitterness of the beer.

As part of Sol Hashemi's exhibition *Tasting Notes* at Western Front, the artist has installed a series of fountain sculptures that stage aspects of his brewing processes—including *Untitled Brew Sculpture (Selenite Fountain)* (2023), which features pieces of selenite crystal that are gradually dissolving away throughout the exhibition's run. By providing the crystals with the conditions they need for dissolution, Hashemi returns them to a state of fluidity—at least for a time. Throughout the exhibition, there is also a selection of Hashemi's brews available for tasting at the front desk. These include *Selenite Amber Ale for Clearing Negative Energy* amongst others made with selenite—so visitors to the gallery can sip on these crystals that emerged from ancient waters. Translucent moon rocks from the dark depths of this wet planet: points of hardness that are always willing to spend time in watery states before recrystallising in new formations, when the conditions are right.

Biographies

Sol Hashemi (b. 1987) is an artist from Vancouver, USA, based in Vancouver, Canada. He views his artworks as mushrooms popping up occasionally from a vast mycorrhizal web. His practice spans many niches, including foraging, woodworking, experimental product photography, stoneworking, cooking, organizing, conceptual floral design, writing, conversation, curating, brewing, and the internet. He was a co-founder of Veronica, Seattle, and is a recipient of the Kayla Skinner Award from the Seattle Art Museum.

Amelia Groom is a writer and art historian who has been waiting on hold with United Airlines for the last 53 minutes. Current and on-hold projects include a collection of essays about silence and a project on gossip and rumour as queer-feminist epistemologies. There was a recent visit to Jersey Island, for Claude Cahun and Marcel Moore's archives. Groom's book *Beverly Buchanan: Marsh Ruins* was published in 2021 by Afterall One Work. Other recent publications include texts on Scheherazade and parrhesia, Dolly Parton and anti-work politics, vibrations, cats, soil, glitter, and an essay about rust co-authored with M. Ty.