

Elements

An International Magazine of Mineralogy, Geochemistry, and Petrology

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ONE MINERAL TO RULE THEM ALL

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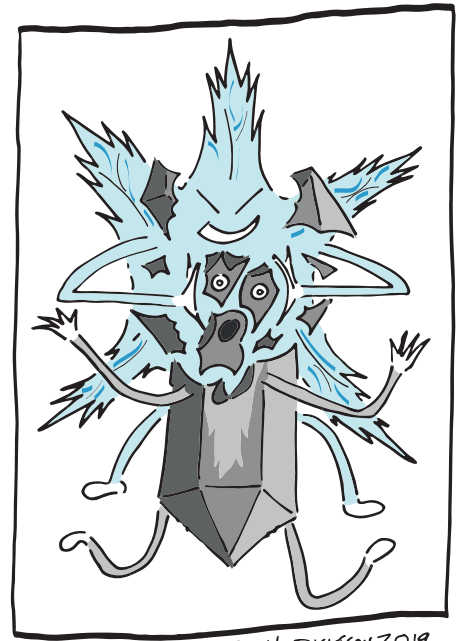
Richard Harrison

Your starter for ten: what is the connection between the minerals: olivine, garnet, ice, magnetite, and quetzalcoatlite? Anyone?

The answer (of course!) is that they are all past winners of the annual mineralogical nerd fest known as the Mineral Cup (@mineralcup)—a Twitter competition founded in 2017 by University of Hull geology professor Eddie Dempsey following a seemingly innocuous tweet of his claiming that “quartz is undeniably the greatest of all minerals.” (see link below for the full origins story). The resulting replies (largely questioning his life choices) led to the now annual event that runs throughout the month of September to identify the “best” mineral from a set of 32 candidates (chosen by an ever-evolving set of community-defined rules and judged on an idiosyncratic range of criteria, ranging from the soundly scientific to the utterly bizarre). I am writing this editorial just as the 2022 competition has come to a dramatic close with fluorite beating zircon convincingly in the final on the basis of its “cubic habit, octahedral cleavage, rainbow of colours, and of course its fluorescent glow...”

Although the mineralogical trash talk and WWF-style memes are a lot of fun (see below for a typical example), the Mineral Cup provides a much needed reminder of the power of minerals to engage and inspire us—more than any of the other copycat competitions that quickly sprung up in its wake (DinoCup, anyone?). According to the organisers, this year’s competition racked up 3.7 million impressions, with each match averaging 100 to 150 replies or quote-tweets campaigning for their minerals, totaling over 3500 photos, stories, facts, and arguments. This provides a great opportunity for people of all ages to engage with our subject, and is a fantastic educational resource for all (be honest, how many of you could give the formula of 2021 winner quetzalcoatlite? I certainly couldn’t, but having checked it out, it is now included as a case study in cation coordination environments and the importance of tellurium for the energy transition in my mineralogy class). If you ever need a reminder of why we decided to specialise in the study of these amazing natural materials, or a way to inspire the next generation of mineralogists, the Mineral Cup is just the ticket.

Working with guest editors Yves Marrocchi and Pierre Beck on this issue of *Elements* “Water in Planetary Bodies” reminded me of undoubtedly the hardest fought and most controversial battle for the Mineral Cup Crown in 2019: quartz versus ice. This battle brought out the very worst in the “not a mineral” crowd, with shock, horror, and even anger expressed that a substance not even



A depiction of ice’s victory over quartz to claim the title of Best Mineral 2019 (ARTWORK: ZACH DICKESON, TWITTER @ZACHDICKESON; INSTAGRAM @ZDICKESON)

stable at room temperature and pressure could be ever considered a mineral in the first place, never mind one capable of beating quartz—the mineral that started it all! I urge those people to take a journey through this issue: drill through the icy crusts of Europa, Enceladus, Ganymede, and Titan, skate across the ice-filled Korolev crater of Mars, sample the icy deposits at the Moon’s south pole, then tell me that ice is not a worthy candidate for the mineralogical champion of champions! If we needed any starker reminder of the importance of water in all its forms, this issue urges us to consider Earth’s planetary twin Venus—once a potentially habitable, water-rich planet with similar mass, size, and density to our own, driven for reasons still debated past a critical tipping point that led to a runaway greenhouse effect and the dry hellscape of 450 °C surface temperatures it enjoys today. Closer to home, ice is now arguably the world’s most endangered mineral; an entire species pushed to the verge of extinction by human-induced changes to the thermodynamic habitat where it thrives. We’d do well to heed the warning from our planetary neighbours...

So enjoy the ride as Marrocchi and Beck guide you through the story of water from the birth of the Solar System to the present day. And for the ice naysayers: you’ll miss it when it’s gone!

Richard Harrison

The Story of the Mineral Cup: <https://eddiempsey.wordpress.com/2017/10/15/the-first-mincup/>