



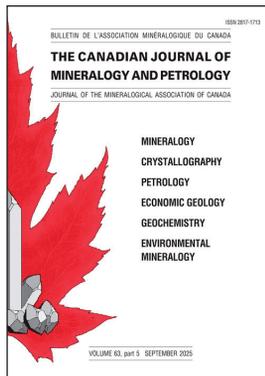
Mineralogical Association of Canada

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NEWS FROM THE CANADIAN JOURNAL OF MINERALOGY AND PETROLOGY (CJMP)

Highlights

The Canadian Journal of Mineralogy and Petrology (formerly *The Canadian Mineralogist*) commences the September issue for 2025 with, depending on your perspective, a shaking-fists-at-clouds rant against the inevitable, or an insightful critical analysis, composed by this editor, on the merits and demerits of including the 'no-longer-occurring-naturally-on-Earth' rare earth element promethium in chondrite-normalized rare earth element plots. This is followed by a taxonomic analysis of demantoid garnet deposits, and no, these are not wild and irrational minerals (demented), but are in fact 'diamond-like' green andradites, as their brilliance and light dispersion properties can exceed those of diamond.



We move on to an examination of Cretaceous skarn-hosted barium silicate mineralization in the Yukon, followed by the characterization of a rare earth element deposit in the Grenville Province in western Quebec, and euhedral silicate megacrysts (crystals of orthopyroxene, garnet, and plagioclase up to 10 cm across) in otherwise massive Ni-Cu-PGE sulfides, probably the result of sulfide infiltration and associated with emulsion, from the Nova-Bollinger deposit in Western Australia. Finally, next time you're out skiing or hiking (depending on the season) at Mont Saint-Hilaire, Quebec, consider that beneath your feet could be a newly discovered hydrated alkali phosphate, esdanaite-(Ce). This mineral is named for Edward Salisbury Dana, son of James Dwight Dana, foundational mineralogists of the late 19th and early 20th centuries. Interestingly, the elder Dana was born in the same hometown as my mother, only earlier. This therefore bestows upon me additional, previously unknown pedigree as a mineralogist, which I expect to see reflected in my citation index going forward, needless to say.

The two most recently read papers in *CJMP* are again concerned with tourmaline in porphyry Cu systems, entitled **Recognizing Tourmaline in Mineralized Porphyry Cu Systems: Textures and Major-Element Chemistry** and **Trace Element Characteristics of Tourmaline in Porphyry Cu Systems: Development and Application To Discrimination**, both by Christopher Beckett-Brown, Andrew McDonald, and Beth McClenaghan, published in issue 1 of 2023 (vol. 61). Four papers are tied as the recent most cited publications, consisting of **On the Attributes of Mineral Paragenetic Modes** (Hazen et al., 2023), **New Minerals from the Redmond Mine, North Carolina, USA: I. Redmondite, Hydroredmondite, and Sulfatoredmondite, Three Minerals Containing the Novel [Pb₈O₂Zn(OH)₆]⁸⁺ Structural Unit** (Kampf et al., 2023), **Trace Element Characteristics of Tourmaline in Porphyry Cu Systems: Development and Application To Discrimination** (Beckett-Brown et al., 2023) and **Structural Controls on the Origin and Emplacement of Lithium-Bearing Pegmatites**, by Silva et al. (2023).

I will conclude here by promoting the November issue, already available online, which features a thematic issue on pegmatites and pegmatite minerals in honour of Robert (Bob) F. Martin, mineralogist and esteemed former editor of *The Canadian Mineralogist*. This issue content follows on from the PEG conference held in Canada in 2024.

MAC SCHOLARSHIP WINNERS 2025

The Mineralogical Association of Canada funds annual scholarships to graduate students. \$3000 scholarships are available to students enrolled in MSc programs and \$5000 scholarships are available to students enrolled in PhD programs.

We congratulate Michelle Stevens, Silvia Castilla, and Babak Ghane, each of whom received a 2025 Mineralogical Association of Canada Scholarship.

Michelle Stevens



Michelle Stevens completed her BSc in Earth Sciences at Carleton University (Canada) in 2024. While at Carleton she had the opportunity to work with Drs. Lyle Nelson and Peter Crockford on the Lomagundi-Jatuli Event (LJE) recorded in the Nash Fork Formation, Wyoming, USA. The Nash Fork Formation contains the highest $\delta^{13}\text{C}$ values ever recorded in marine sediments (30‰) and has been leveraged as evidence for an 'oxygen overshoot'. However, controversy remains regarding the local, global,

or diagenetic nature of this enigmatic geochemical feature. This research is now part of her MSc supervised by Dr. Peter Crockford at Carleton University and Dr. Lyle Nelson at the Massachusetts Institute of Technology and aims to further decipher the depositional conditions of the Nash Fork Formation, combining petrology, mineralogy, and geochemical tools to decipher the local, global, or diagenetic nature of the extreme $\delta^{13}\text{C}$ values. Specifically, she is applying barium isotopes ($\delta^{138}\text{Ba}$) and triple oxygen isotopes ($\Delta^{17}\text{O}$) in carbonate associated sulfate (CAS), as indicators of possible basin restriction, along with iodine-to-calcium ratios (I/Ca) and carbonate associated phosphate (CAP), to constrain the degree of water column oxygenation and nutrient levels, respectively. These geochemical tools will aid in distinguishing between current GOE and LJE hypotheses and shed new light on the extremely positive carbon isotope values within the Nash Fork Fm. After completing her MSc, Michelle hopes to continue researching Proterozoic carbon cycling and explore implications on biospheric evolution.

Silvia Castilla



Silvia Castilla completed her BSc at the National University of Colombia in 2017. Her passion for volcanoes started with her undergraduate thesis, when she studied the Azufral volcano in Colombia under the supervision of Professor Natalia Pardo. To grow as a volcanologist, Silvia joined the Colombian Geological Survey, where she contributed to the new version of the Galeras volcano geological map and co-authored the first methodological guide for volcanic geological mapping in Colombia. In 2021, with

the support of a Fulbright Scholarship, Silvia pursued an MSc in geology at the University of Maryland, College Park, under the supervision of Professor Megan Newcombe. Her study revealed one of the most water-rich magma compositions ever measured, with results published in the *Journal of Petrology*.

Currently, Silvia is doing her PhD at the University of Toronto under the supervision of Professor Corliss Sio. Her research aims to improve the accuracy of the diffusion chronometry method—a technique used to determine timescales of pre-eruptive magmatic processes—by using non-traditional stable isotopes. Her project involves measuring the Mg-Fe isotopic composition of olivine crystals from volcanoes around

the world to evaluate the most likely source of chemical gradients in volcanic crystals. For her project, Silvia is using cutting-edge instrumentation unique in Canada, which allows high-precision isotope analysis using a femtosecond laser ablation MC-ICPMS. Moreover, she will develop a machine-learning-based geochemical tool based on trace and minor elements that can help to identify diffusion-controlled zoned crystals. To expand the method for more felsic compositions, Silvia will explore Mg isotopes in plagioclase as an alternative crystal clock. Ultimately, her work will address critical challenges in diffusion modeling and will provide new insights to guide future petrology and volcanology studies, contributing to our understanding of volcanic processes.

Babak Ghane



Babak Ghane completed his BSc in mineral exploration at the University of Yazd, Iran, in 2013. His undergraduate thesis, supervised by Dr. Farhad Mohammad Torab, focused on the processing and mapping of stream sediment geochemical data. Driven by a deep interest in mineral exploration, he pursued an MSc at the University of Tehran, where he completed a thesis on geostatistical modelling of the Surry Gunay epithermal gold deposit under the supervision of Dr. Omid Asghari, graduating in 2016.

Following his graduate studies, Babak entered the mining industry as a resource geologist, contributing to multiple exploration projects at both regional and deposit scales in Iran. In January 2023, he began his PhD at the University of New Brunswick, Canada, under the supervision of Dr. David Lentz. His research focuses on mineral prospectivity mapping for gold and polymetallic deposits across a 1,500 km² area in southwestern New Brunswick.

His PhD research is structured around four main objectives: (1) identifying major ore-forming systems in the study area; (2) evaluating known mineral occurrences and identifying potential new sites through fieldwork, sample collection, and portable XRF (pXRF) geochemical analysis; (3) acquiring in situ petrophysical measurements, including magnetic susceptibility (MS) and gamma ray spectrometry (GRS); and (4) integrating geological, geochemical, and geophysical datasets using advanced machine learning techniques to generate reliable mineral prospectivity maps for gold and polymetallic mineralization. This approach not only identifies high-potential areas but also provides insights into the controlling factors of mineralization, such as host rocks, alterations, and structural features.

MAC TRAVEL & RESEARCH GRANT WINNERS 2024

Rifkhan Mohammed Nayeem



Rifkhan Nayeem completed his Bachelor's degree at Uva Wellassa University and his Master's degree at the University of Peradeniya in Sri Lanka. He is currently a PhD candidate under the supervision of Dr. Yana Fedortchouk in the Department of Earth and Environmental Sciences at Dalhousie University (Canada). His PhD research focuses on exploring the potential for rare earth element (REE) extraction from kimberlite tailings. He was awarded the MAC travel grant to attend the 12th International

Kimberlite Conference (12IKC), a renowned conference in kimberlite that is held every four years, where he presented a poster titled, 'Occurrence and Recovery of Rare Earth Elements from Kimberlite

Tailings in Diamond Mines'. He gained valuable insights by attending talks and engaging with experts with similar research backgrounds. This experience provided helpful feedback on his findings and allowed him to connect with academics and professionals in kimberlite research whom he might not have met otherwise.

Jade Umbsaar



Jade Umbsaar is a third-year PhD student at the University of Toronto. She is investigating the distributions of critical metals within seafloor hydrothermal systems, with a particular emphasis on fluid evolution through interactions with the underlying host rocks and magmatic plumbing systems. Her ongoing research into seafloor hydrothermal systems led her to New Zealand, where she boarded the R/V Tangaroa to investigate the effects of newly formed hydrothermal systems within the young

Hunga-Tonga crater, following the 2022 eruption there. Preliminary bathymetric investigations and dredged samples have demonstrated a budding volcanic and hydrothermal system within the crater. Jade's primary duties aboard the vessel were to characterize, sort, label, and bag dredged rock samples, as well as coordinate the daily log, participate in CTD (conductivity, temperature, depth) casts, and assist with the cleaning of bathymetric data. This was Jade's second research cruise; the first of which was to the Mid-Atlantic Ridge. Her expanding geologic dataset ranges across multiple tectonic environments and volcanic centers, allowing for a thorough investigation into the controlling effects of critical metal enrichment in seafloor hydrothermal systems.

Lot Koopmans



Lot Koopmans is a PhD student in the Department of Earth Sciences at the University of Oxford (United Kingdom), completing a project on Li-Cs-Ta pegmatites in Zimbabwe. His project focuses on unravelling source controls and structural mechanisms for pegmatite emplacement, so that a mineral system model for hard-rock lithium deposits can be developed. Lot used the MAC Travel grant to attend the GAC-MAC-PEG-2024 conference in Brandon, Manitoba, where he presented a talk

titled, 'Structural controls on the emplacement and mineralization of lithium-bearing pegmatites'. The talk was part of the 10th international symposium on granitic pegmatites, which brought together global experts and leaders in pegmatite research and exploration. Lot's talk was well received, and discussions during the conference and the subsequent conference field trip provided him with many new insights and ideas to pursue moving forward. The opportunity to attend this conference was unique and a fantastic learning experience, which would not have been possible without the grant.

Mac is happy to welcome you to St. John's for GAC-MAC 2026!

We are excited to co-host the 2026 annual meeting of GAC and MAC in St. John's, Newfoundland and Labrador from May 25th to 28th, 2026. You can expect an exciting scientific program including technical sessions and symposia, as well as a number of pre and post conference field trips, workshops and short courses.

The meeting will be hosted at the **St. John's Convention Centre** in the heart of downtown St. John's, close to hotels, restaurants and bars.

The preliminary program with all sessions and events is now available on the meeting website. Abstract submission will be open from Dec. 2025 to Feb. 2026. Registration will open in Feb. 2026.

GAC-MAC 2026
FROM SHORE TO SEOTE
ST. JOHN'S
MAY 25-28