Association of Applied Geochemists

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FROM THE PRESIDENT

Ryan Noble, President AAG

Later this year, the conference Exploration '17 (www.exploration17.com) will be convened in Toronto (Canada). This event is the sixth decennial mining exploration conference, which has been held in the seventh year of every decade since 1967. I hope to attend and am a coauthor on a paper titled "Advances in Exploration Geochemistry, 2007 to 2017 and Beyond" that will be published in the Exploration'17 conference proceedings. In pursuing background details for this paper, I referred to the previous decennial abstract, "Major Advances in Exploration Geochemistry, 1998–2007" by Cohen et al. (2007), along with the similarly titled paper in our journal, *Geochemistry: Exploration, Environment, Analysis* (*GEEA*) (Cohen et al. 2010). I also referred farther back to one of the earliest online AAG newsletter articles to see what the state-of-play was during these times. In *Explore* issue No. 15 (December 1974) was an article authored by Carpenter (1974) titled, "Status of Exploration Geochemistry in U.S. and Canadian Universities". Interestingly, the one clear common thread to all of these aforementioned articles was the lack of future geochemists coming through the third-level education system. Exploration geochemistry courses were few and far between. While the early newsletter article was only referring to North America, I can safely say that the same challenges existed in Australia and many other countries. Our recent AAG member survey identified this risk to a key area of our applied research and, although I don't want to give too much away for the upcoming decennial paper, I think it is safe to assume that this theme continues.

"At present, most personnel training is done by geochemical departments in government organizations and industry groups. Most schools in the United States and Canada do not offer geochemical training, particularly at graduate levels, due to faculty limitations, lack of budgetary support, and the erroneous impression that applied geochemistry is not sufficiently academic." Cavender, W. (1968) – a review article in *Mining Engineering* quoted by Carpenter (1974).

The more things change, the more things stay the same, it would seem. So, while concepts, applications, technology and many other things have come a long way forward in applied geochemistry, our ability to train future geochemists has come full circle. This is not completely disheartening and should be viewed as a clear guide. It is solid evidence pointing to where we as a community and the AAG need to do better. If you are reading this and in academia or in a current training or mentoring role, please know that you are possibly the most critical part of future geochemistry, and I hope you are able to support or grow your educational offerings and continue to bring more students into our discipline.

The AAG student awards are being updated, and there will be more funding available to attend the June 2018 International Applied Geochemistry Symposium in Vancouver (Canada) which will be part of the larger Resources for Future Generations conference (RFG2018). I fully anticipate that the AAG will provide an excellent platform for students to present their work. So, please make sure to mark it in your calendar and get prepared well in advance. More details are available at the RFG website (www.rfg2018.org), as well as on the AAG website. The AAG will circulate details for abstract submission and travel awards in the near future.

An update from the most recent AAG council meeting shows the AAG website will be shifting to a more easily operated platform, which should make renewals, and a number of other issues that members have raised, easier to deal with. Hopefully, AAG members will not notice too much of a change from the front end. One clear point from the council meeting was that new AAG councillors are needed for next year (2018). If you are a Fellow and would like to be more active in the AAG, please let me know.

Finally, it is with regret that we learned of the passing of distinguished Chinese geochemist Professor Xie Xuejing (1923–2017). He will be greatly missed in the geochemistry community. When I was a young geochemist in 2007 in Oviedo (Spain), I clearly remember his speech when he received the AAG Gold Medal. His list of achievements were most impressive.

Ryan Noble, AAG President

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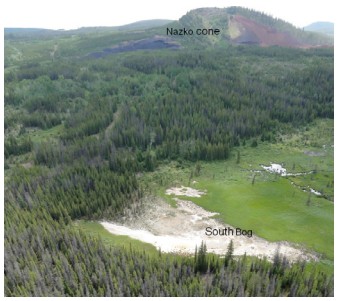
RECENT ARTICLE PUBLISHED IN *EXPLORE*

The following is an abstract for an article that appeared in issue 175 of the *Explore* June newsletter.

"Evidence of Geothermal Activity Near the Nazko Volcanic Cone, British Columbia, Canada, from Ground and Surface Water Chemistry"

Ray Lett[1] **and Wayne Jackaman**[2]



View of the South Bog wetland with the Nazko volcanic cone in the background.

Travertine deposits and CO_2-rich gas seepages, known indicators of geothermal activity, are common in two wetlands, informally named the North and South Bogs, near the Nazko volcanic cone, British Columbia, Canada. Although travertine and the CO_2-rich gas seepages suggest sub-surface geothermal activity, the bog water temperature is less than 23 °C. Lithium, Sr, Rb, Si and B contents are elevated in bog ground and surface water, but concentrations are lower than those reported in the hot springs at global geothermal fields. Chloride and Hg could not be detected in the bog water. Water at the base of a small travertine cone associated with a strong CO_2-rich gas seep in the North Bog has an unusually low (<6 °C) temperature with elevated B contents up to 436 ppb and Li up to 380 ppb. Thermodynamic modelling predicts aragonite, calcite and chalcedony can precipitate from bog water and a chalcedony thermometer suggests higher water temperature up to 68 °C in the past. Anomalous Li, Rb, Sr and B content are indications for a deeper, warmer fluid that cooled during movement to the surface, but δD and $\delta^{18}O$ isotope data and absence of Cl^- suggests the bog water is mainly meteoric. The $\delta^{13}C$ values, however, indicate that the CO_2-rich seepage gas may be from a deep, magmatic source.

The full article can be viewed at: https://www.appliedgeochemists.org/index.php/publications/explore-newsletter

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