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Distinguished Lecture Tour 2018, Dr Jim McQuaid

It seems a very long time since I returned from the final lecture of my tour but it is actually less than six months ago now. When I had originally been told that I had received this honour I did wonder how I would present atmospheric science to geochemists. It turns out it was much easier than I thought. I originally did a chemistry degree and then moved into atmospheric chemistry, so I am a chemist "by birth". My current research involves a great deal of geochemistry, part of my research is studying the ability of minerals to produce clouds high up in the atmosphere and also I work with geochemists investigating the interactions between minerals, airborne pollution (black carbon) and microbes on the surface of the Greenland Icesheet. So the links are all there, and only need a small introduction to make the link across to the primary science of the EAG. It also provided me with an opportunity to reinforce these links to the geochemist community, often these barriers are not actual barriers, sometimes we just get 'set in our ways' too easily.

I had very much been looking forward to visiting cities that were new to me. In this business we do get to go to lots of new places, both on scientific visits and some of us, myself included, also undertake fieldwork which further expands the list of places visited. Two weeks before the first lecture of my European tour I was taking part in a two day fell race in the Black Mountains in South Wales when I fell and broke my ankle but after a discussion we pushed on with the plans, the biggest impact was probably my ability to walk around the host cities and also going for an early morning run before breakfast, a favourite activity of mine to counteract hotel breakfasts and restaurant meals.

My first port of call was to be Krakow, I have only visited Warsaw previously so it was very interesting to learn about the industrial past of the area and what the challenges are to those studying the environment as we move into times where we consider our impact on our surrounding rather than just how we can benefit from it, or exploit it as some might say. I had a 'deck' of four lectures that I had put together for institutes to choose and the group in Krakow had selected 'Geoengineering the Climate' and 'High altitude mineral dust and ice clouds'. Thankfully when I designed the talks they are subjects which is it quite simple to link them together, and the second refers to concepts already described in the first. I love using analogies to illustrate the science I am presenting, the more bizarre the better is my mantra. One of my favourites is using stout to explain scattering of solar radiation by aerosols and cloud droplets and I can go even further from here to explain one particular idea to geoengineer the climate. I won't explain here, you'll just have to watch the video! I will say that a slide showing nothing but a glass of beer always gets people's attention!

From I moved onto Hungary and Budapest for my next city, again a pair of talks, this time it was to be volcanoes coupled with high altitude mineral dust and ice clouds. Often there are members of the audience much more knowledgeable on a subject than I and I was already in the habit of opening a talk about mineral dust to a room of geochemists to warn them of this. This was certainly the case for the audience in Krakow and again in Budapest, this does mean that I get to learn lots of new and interesting angles on my talk that I haven't considered previously. This was certainly that case in Budapest.

Science is all about collaboration and talking to lots of different people, sometimes you create new links. During the evening meal, as the group introduced their own particular area of research, I had one of those lightbulb moments, "do you guys know Marek at Jagiellonian University in Krakow?" the topic had turned to nanospheres of iron, a subject I had only been discussing a couple of days previously in Poland. So I happily did an email introduction to the groups in Poland and Hungary hoping that this proved to be fruitful in the future. I will to say that the research group I joined for

supper in Budapest was probably the most geographically diverse one I have spent time with. Over the years I have done a lot of fieldwork with many international colleagues, but from a group of 8 people, there were 7 nationalities! This is a great aspect of doing science, so few people have the opportunity to spend time with people from so many different backgrounds/cultures, it is always fascinating to talk science, I always like to think that there are no borders in science, or very few at least.

Veszprém was my next destination, I have to admit this was a city that I had not heard of before this trip so I did a little bit of research. It's always nice to know a bit about the place, it turns out that Veszprém is a city built on seven hills just like Rome. I am originally from Sheffield which also claims to be built on seven hills too, so such a geographical fact stuck in my memory. The venue for my lecture was Veszprém castle, it is the home of the Regional Centre of the Hungarian Academy of Sciences. The audience was more general than the previous two visits, a public lecture with different but no less interesting questions about geoengineering, questions are an important part of a talk and often mould how the talk is subsequently delivered and explained. The venue was also to be my overnight accommodation, I've never stayed in a castle before and I think it might be some time until I repeat that feat!

A very early in the dark to the airport meant I didn't get to see much of the city apart from the highway back to Budapest and the airport. The last visit on this part of my tour took me to Bucharest, which I discovered was so far east that I entered a new time zone. No doubt I was told this upon landing at the airport but it didn't sink in and I didn't change my watch. So the phone call from Victor, who lives close to the hotel and had kindly offered me a ride to the university, the following morning was a little unexpected, in the end it simply meant no breakfast which isn't the end of the world. I felt a little better when talking to Victor who thought that the UK was in the same time zone and the rest of Western Europe, thus my mistake was informative to both of us.

After a very interesting tour of the remote sensing facilities including some impressive lidars at the institute Victor took me back to the airport. He is proud of his home and in heavy rain took me past the Palace of the Parliament, which is a simply immense building and where immense really means very big indeed, the second largest building in the world after the Pentagon, it took some time to drive round it I can tell you that. Wikipedia describes it as a "colossal building" and it has a very interesting history, being conceived at the latter stages of the cold war and finally being finished after the major changes in Eastern Europe following the fall of the Berlin Wall.

My final lecture was a few days later in Zagreb was to give a pair of lectures which were possibly most closely linked, geoengineering the climate and the role of atmospheric mineral dust in modifying surface albedo and cloud radiative properties fit together perfectly. With the second just going into greater depth. I think this pairing reinforced to me most of all that some much science is interconnected and that disciplines need to step out of their own little silos and talk to each other. Some often this starts with a cup of coffee and just evolves naturally. I feel that one of the most important roles of learned societies such as the EAG is to facilitate this discussions and we must never lose sight of this. I would like to thank the EAG and it's outreach committee and all those you hosted me and helped me with my travel plans, it worked out very smoothly despite my injury. Finally I need to thank Marie-Aude and Alice in the EAG office to being so patient with me.

http://www.eag.eu.com/outreach/dlp/lecture-tour-2018/