Some words of thanks to Palaeoecology, Institute of Plant Sciences, University of Bern on the occasion of the final dinner in Chalet de Gruyères on 9th September 2016 of the 40th International Moor Excursion, western Switzerland

By *John Birks*

(These notes are closely based on what I said at the final dinner, but with some additions such as surnames for clarification)

For any successful Moor Excursion there are **ten essential components**

1. **Place** – where better than the Swiss Alps with their excellent climate, spectacular scenery, outstanding scientists, and wonderful science? Quite a contrast to a Moor Excursion in the dreary and dull Fenlands of East Anglia (or the Dutch Polders)!
2. **Organisers** – any successful excursion needs a group of devoted organisers. Fabian Rey, Christoph Schwörer, and Erika Gobet have been an outstanding team of organisers, along with Petra Boltshauser-Kaltenreider, Sandra Brügger, Willy Tinner, and many other Bern colleagues. I award the organisers 99% for their organisation. I will return to the missing 1% in a minute.
3. **Guide-book** – Fabian, Christoph, and Erika, along with all the contributors, have produced a superb guide-book full of relevant information. It is a quite fantastic compilation.
4. **Drivers** – clearly an excursion needs drivers and we have been fortunate in having so many careful and skilful drivers – Erika, Willy, Christoph, Sandra, Fabian, Carole Adolf, and Daniele Colombaroli.
5. **Site presenters (demonstrators)** – we have been very fortunate in having so many excellent and clear presentations by a wonderful group of demonstrators, young and not so young! These include Lucia Wick, Erika, Othmar Wey, Fabian, Oliver Heiri, Ryan Hughes, Brigitta Ammann, Willy, Christoph, Sandra, Philippe Curdy, Daniele, Carole, Lena Thöle, and Jed Kaplan, and short presentations from Moritz Gubler, Sabastian Eggenberger, and others.
6. **Work presented** – all the work presented has carried the characteristics of Bern palaeoecology – really excellent, exciting, detailed, scientifically rigorous, novel, and to use European Research Council jargon 'cutting-edge' and 'game-changing,. To me there have been several highlights – Carole and her modern charcoal studies; Sandra and her glacial pollen; Christoph and his modelling work published in *Global Change Biology* that shows so well how palaeoecology, modern ecology, and predictive global-change ecology belong together; Fabian and his superb detailed work at Burgäschisee and Louenensee; Brigitta and her team's brilliant work at Gerzensee; Oliver and his elegant use of chironomids in archaeology; Erika and her Neolithic on-site studies (Zürich Opera!); and Daniele and his superb work at Lac du Mont d'Ogre. All the work presented was top class and showed real talent.
   One might ask—and some do—what's new? When I hear such a question I am reminded of John Harper, one of the founders of modern plant population ecology. In a review of Henry Horn's *The Adaptive Geometry of Trees* published in the Princeton Series on Theoretical Biology where Horn had rediscovered what was long known in the central European forestry literature that

pioneer trees such as *Betula* differ in their growth form or 'adaptive geometry' from *Pinus, Quercus*, or *Fagus*, Harper concluded his review in *Science* by saying "does one feel sorry for the author's ignorance". On the Excursion we were introduced to so much new, exciting, and excellent science that it was almost over-powering.

7. **Company** – good company is essential and the Excursion had colleagues from at least 13 countries.
8. **Languages and definitions** – why, you may be wondering, not 100% for organisation? The organisational omission and hence the missing 1% is that the otherwise excellent instructions that Fabian sent out did **not** tell us that Christoph's sense of time to walk to Col du Sanetsch should be multiplied by at least two or three or that Fabian's sense of distance of 'around the corner' in Sion to get to Restaurant Cave de Tous-Vents needs to be multiplied by five or ten! Seriously, the language has been superb. The Swiss are so talented linguistically, perhaps not Queen's English or even Oxford English, both of which are almost extinct in England, but certainly good, clear, simple English!
9. **Surprises** – any excursion needs a few surprises. On this excursion there were several surprises.
   (i) no mention of Swiss PIE (Willy and Daniele know what Swiss PIE and detrended richness are – I was so glad that they were not mentioned!)
   (ii) Pim van der Knaap had just retired. I had thought he had retired a long time ago because he is so helpful and prompt to all my queries that I assumed he had retired long ago!
   (iii) Jacqueline van Leeuwen is retiring – impossible to believe!
   (iv) The presentation to Jacqueline and Pim of the seven volumes of all their publications bound together – a truly magnificent idea.
   (v) This presentation raised the obvious question – how many pollen grains has Jacqueline counted and at what rate? Pim's estimate is about 3 million. To estimate her counting rate, we need extra information, all of which have many uncertainties, so to derive a credible estimate of rate we need to adopt a Bayesian rather than frequentist approach.
   How many years has Jacqueline been counting pollen? About 30 years, so she counts 100,000 grains a year. Assume she counts on 300 days a year, giving about 333 grains a day: assume she counts for 10 hours a day, then she counts 33 grains an hour. There are 60 minutes (no uncertainty here), so Jacqueline counts half a pollen grain a minute.
   The priors are poorly known, so if we vary their values realistically we get broad credible intervals ranging from 0.2 to 10 grains per minute! But the credible interval does not include zero, so we can, with 95% credibility, conclude that Jacqueline has counted pollen at a rate of at least one half grain per minute, possibly up to ten grains per minute when she is sitting at her microscope.
   Pim and Jacqueline asked me to express on their behalf their sincerest thanks to Brigitta, Willy, and the Bern group for tolerating them – so sorry, Pim – for having them in Bern for the last 25 years.
10. **Future** – the Bern palaeoecologygroup goes on and on and from strength to strength. I did not know until Willy told me that palaeoecology in Bern started in 1834.
    1834: Professor Hugo Mohl with his book about the construction and forms of pollen grains.
    1920: Professor Walther Rytz (1882 – 1966) with his 1911 habilitation on the history of the flora of the Bernese Hills between the Alps and the Jura.
    Max Welten and his classic work at Faulensemoos. I had the privilege of meeting Welten and his wife once in Austria in 1974.

Gerhard Lang who I first met in Finland in 1976. I learnt a huge amount from the IGCP 158B excursion in Switzerland in 1985 led by Gerhard.
Brigitta Ammann who I first met at INQUA in 1977 and I have had the pleasure of working with since 1987.
Willy Tinner – we cannot decide when we first met, probably in the early 1990s.
So there have been **five** generations covering nearly 100 years in Bern. Nowhere else has this continuity record in palaeoecology: Copenhagen – three generations; Cambridge – three generations; Bergen – three generations.

In conclusion, I am delighted to have had a 'Bern Connection' for 30 years with Brigitta, Andy Lotter, Oliver, Willy, and their students. Long may the Bern group continue to grow and to remain at the forefront of the world's palaeoecology laboratories.

Finally I have been asked by Erika to give Willy on behalf of the organisers a present that will help him in the field and even in the Institute. As a schoolboy I was envious of people who had a famous Swiss Army pen-knife. I had read many World War II prisoner-of-war escape books where the aim was to escape and reach neutral Switzerland. As an 11-year-old boy I assumed that as Switzerland was neutral, its Army defended this border with their pen-knives, so it was possible for escaping prisoners-of-war to enter Switzerland! Willy can use his new Swiss Army pen-knife to defend Bern Palaeoecology from any molecular or physiological intruders!

Very warm thanks to the Bern Palaeoecology group for this truly superb 40th Moor Excursion. Gerhard Lang would have been so very proud of this excursion, its organisation, its outstanding science, its magnificent guidebook, the excellent presentations by young scientists, and the international camaraderie of the excursion and all its participants.

Thank you so much for such a great excursion.