Als international agierendes Institut sucht das IPN einen engen Ideenaustausch mit Wissenschaftlerinnen und Wissenschaftlern weltweit. Dieser Austausch reicht von projektbezogenen Kontakten und Kooperationen über internationale Forschungsverbünde bis hin zu Forschungsaufenthalten. Am IPN begrüßen wir immer wieder Gastwissenschaftlerinnen und -wissenschaftler, die über mehrere Wochen oder Monate bleiben und zum Teil eng in Aktivitäten der Arbeitsgruppen eingebunden sind. In der Abteilung Didaktik der Biologie am IPN arbeitet der Gastforscher Professor *Michael J. Reiss* vom Institute of Education des University College London.

The problem with evolution

Michael J. Reiss

Way back in 1978, I started a PhD on the behaviour of red deer *(Cervus elaphus)* on a small island, Rhum, off the West Coast of Scotland. My supervisor was Tim Clutton-Brock, now a very distinguished senior professor, and this was in the really exciting days of evolutionary biology. While I was an undergraduate (1975–1978), E. O. Wilson had produced his famous *Sociobiology: The New Synthesis* and a young Oxford biologist called Richard Dawkins had written the wonderfully readable *The Selfish Gene*.

It was a great time to be doing a PhD on animal behaviour and population genetics. After I finished my PhD, I did a Post-Doc in evolutionary biology and then spent a year training to be a school teacher. I taught school biology for five years and then in 1988 moved into Higher Education, where I have been ever since, first at the University of Cambridge and then, since 2001, at what is now called UCL Institute of Education, University College London.

At about the time I moved to London, Ute Harms (the current head of the IPN department Biology Education) and I had started to get to know each other through the early days of ERIDOB (European Researchers in Didactics of Biology) Conferences. However, it was only a couple of years ago that Ute and I talked seriously about the possibility of working together. Both of us have long-running interests in evolution education. Ute's have perhaps focused on the cognitive difficulties that students may have when trying to learn about evolution. As is well known, understanding evolution is not easy – evolution takes place over long periods of time, while appreciating the way in which natural selection works requires considerable abstract thinking and an ability to reason at the levels both of individuals and of populations.

» *That what the field was lacking was a collection of accounts of research-based interventions that use existing knowledge to produce new pedagogies to teach evolution to learners more successfully, whether in schools or elsewhere.* «

My own focus on evolution education came from my increasing realisation that for some students it is cultural issues that cause them to have difficulties learning about evolution. When I was a school teacher, occasionally students would politely come to see me at the end of a lesson and explain that they didn't accept evolution for reasons to do with their religious faith. As I have a fairly conventional Christian faith – indeed, I have been an ordained minister in the Church of England since 1990 – I always listened respectfully to them and generally tried to make it clear that whether or not they accepted the theory of evolution was up to them; what I wanted to do was to make sure that they understood the theory.

That, pretty much remains my view to this day. Given my background as a PhD student and post-doctoral researcher for whom evolutionary arguments were absolutely key to my work, it is unsurprising that I am passionate about the intellectual worth of accepting the standard scientific account of the story of life on Earth. However, even though I do not regard the theory of evolution as being scientifically controversial, it is clearly a sensitive topic for some students and therefore as teachers we should respond in a way that is respectful of our students.

Ute and I are now editing a book with the title *Evolution Education Re-considered.* We both felt that what the field was lacking was a collection of accounts of research-based interventions that use existing knowledge to produce new pedagogies to teach evolution to learners more successfully, whether in schools or elsewhere. We put out a call for contributors and ended up hosting a most successful workshop earlier this year at IPN Kiel which included some wonderful meals

Participants at the 2017 workshop at IPN Kiel for Evolution Education Re-considered.

» *All in all, I am hoping my relationship with IPN Kiel will continue for some time to come.* «

and a memorably boat trip as well as a lot of hard work as we discussed and argued over the chapters in the book.

Our hope is that this book will help those working in the field of evolution to realise that a body of knowledge is beginning to be built up about how students can be helped to learn about evolution. Furthermore, sometimes such teaching causes students to feel more positive about the idea of evolution and to be more likely to accept its key aspects.

IPN Kiel has generously made me a Visiting Professor, so my trips out to Kiel are not restricted to work on the book that Ute and I are editing. I got to Sankelmark, a venue near Kiel, attending the annual retreat of the department in 2016 and in 2017 and will be visiting again in 2018. Perhaps I can add that I have been made wonderfully welcome by IPN, Ute, and on a personal level by her family. I now look forward greatly to my visits.

I think Ute and I will first get this book finished – which should happen within about six months – and then we can discuss whether we seek to undertake another project together. All in all, I am hoping my relationship with IPN Kiel will continue for some time to come.

Michael J Reiss
m.reiss@ucl.ac.uk