From Austria to Australia: formative years in science with Prof. Dr. Werner Piller

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When people talk about their formative years, they usually refer to their childhood, or their adolescence. But for people in science this often has a very different meaning. Scientists, apart from deciding who they are personally, also set course for who they want to be as researchers. In order to do that however, we have to first figure out which path we want to take. To a large part this is decided by who our supervisor will be. All of us who went through this process are aware of it, and so for this occasion I wish to share my very personal experience of how Werner Piller influenced me as my supervisor. So, to provide a rather personal glimpse of Werner as a teacher and mentor, I'll be taking you on a short journey through time and space. From a vanished ocean in Lower Austria, to the Mediterranean Sea 20 million years ago and then on to an expedition "Down Under" along the west coast of Australia.

Fig. 1: Werner Piller being a 'hands-on' educator teaching his graduate students on the field trip 'Actuopaleontology' in the Florida Keys (USA, 2014).

Werner as a teacher and mentor always devoted real effort in teaching us with hands-on approaches, during fieldwork but also in his lectures. His approach to teaching went beyond a concerted effort to educate his students and extended to connect us with the larger international community as early as possible. For me this started with him suggesting that I join an international summer school where an all-star list of international researchers in our field came together to teach aspiring students. Honestly, I was a bit intimidated by meeting all those 'big' names. Back then I had only just gotten my first results for my thesis and had very little idea what it all meant. By the time the summer school had finished, however, I had learned much about new techniques and ideas I was itching to apply to the data from my thesis. After hearing that, Werner never hesitated to give me the freedom to explore these ideas. By doing so he also taught me important lessons on how to formulate research questions and time management. With that, I was finally ready to explore how tiny fossil remains of single celled algae that lived millions of years ago are related to climate change.

In the end, Werner's efforts during that time not only gave me a much better idea how I wanted to proceed with my scientific path, but also helped me to build a budding network of international colleagues. But maybe best of all it boosts confidence to see that there is wider scientific interested in what you do as a

student, and I feel Werner found a very elegant way to do that early on. That he then also supported me in publishing my results in international journals, was again just way beyond what was required of him as a supervisor. He did it regardless and with a lot patience.

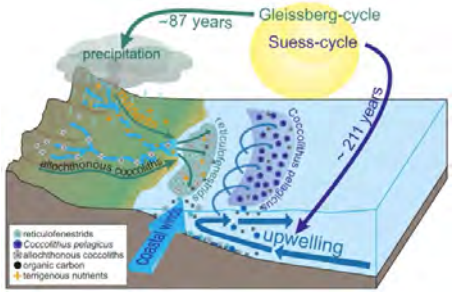

Fig. 2: Deciphering the mechanisms of climate about 16 million years ago using the response of calcareous nannofossils to changes in rain fall and wind-driven upwelling, supplying nutrients to the surface ocean (from Auer et al., 2015).

Following this Werner committed to mentoring me on as a PhD-student and we moved from Austria to Italy, to study the evolution of the Mediterranean Sea as part of a research project. There we focused on the controlling mechanisms of Earth's climate and how our planet and its environment respond to changes over time. This work also took us into outer space, figuratively at least, as much of these controlling factors are rooted in changes and the interplay of in our planet's rotation and its orbit around the sun. With our work in Italy we could show how sensitive shallow marine environments responded to changing climatic patterns in the past and placed them into a larger global picture in unprecedented detail. With this we developed a detailed model explaining how these changes were preserved in Miocene sediments between 21 and 12 Million years ago.

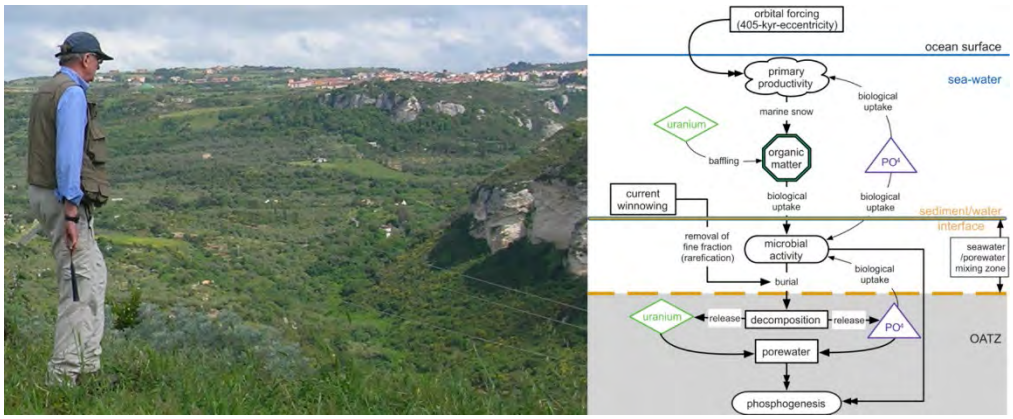

Fig. 3: Werner Piller contemplating the depositional structures of carbonate cliffs of Sassari on Sardinia (2013) and a model of how orbital climate cycles can be preserved in such sediments in central Italy (Auer et al., 2016).

But Werner again did not only support and coordinate my PhD-research in central Italy. He also put in that extra mile again, by completely supporting my application for an international research expedition to Australia. Joining one of these expeditions aboard one of the marine research vessels of the International Ocean Discovery Project – or IODP for short – is a big step for any early-career researcher. Being part of IODP and getting to know an international team of scientists forges collaborations that last a lifetime. Such an opportunity opens the doorway to many careers, but as a newcomer in science you need someone who is willing to put in the extra effort to get you there. And Werner was that person for me. However, I was certainly not the only one, he did all that for.

To conclude this short journey through my formative years in science, I can only say: Teachers and supervisors take heed! Werner knows how to be that exceptional kind of teacher and supervisor that every student should be fortunate enough have at least once in their lives. His tireless and continued contribution to science, our community and especially his students is definitely something we all should take to heart.