African sands

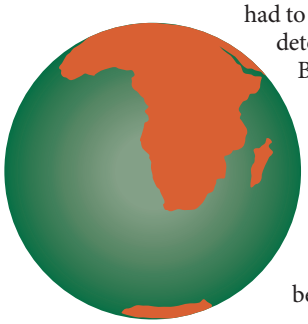
Pieter Vermeesch enjoyed training for a marathon in an empty two-dimensional space, with his eyes closed, in-between sampling aeolian dunes in the Namib Sand Sea.

What was the objective of the work?
We wanted to measure the average residence time of sand grains in the Namib Sand Sea, but the results of this study actually exceeded my own expectations. In my proposal for funding, I had included a so-called 'banana plot', a schematic diagram with predicted results. The actual measurements fitted these predictions almost exactly. It is a rare pleasure to see this happen in geomorphology!

Why did you choose this location?
The Namib Sand Sea is a unique natural laboratory for the study of aeolian processes, for two reasons. First, sediment is derived from a single source, the Orange River at the southern boundary of Namibia, and the winds (and therefore the sand transport) occur in a constant northward direction. This makes the boundary conditions less complex than those of most other deserts. Second, Namibia is a peaceful country and the Namib Sand Sea is easily accessible in contrast to, for example, most sand seas in the Sahara.

What sort of samples were you after?
I collected 12 samples of aeolian sand at the crests of large dunes, all around the edges of the sand sea, plus one sample of river sand from the mouth of the Orange River, on the border of Namibia and South Africa. On return to the United Kingdom, we used bromoform to separate the light minerals from the dense ones. Zircon in the dense fraction was dated using the U–Pb method, and quartz in the light fraction was dated with cosmogenic nuclides.

Did you encounter any difficulties?
It was not easy to get the Orange River samples. I first tried to get to Oranjemund through the Sperrgebiet diamond mining area, but was stopped at a checkpoint not far from Rosh Pinah for lack of a permit. I then had to make a 500-km detour to Alexander Bay in South Africa through Vioolsdrif, only to discover that both the Namibian and the South African sides of the border were off limits because of diamond mining activities. I ended up collecting the sample under the bridge in the no man's land between the two countries with the permission of the friendly South African border guards.



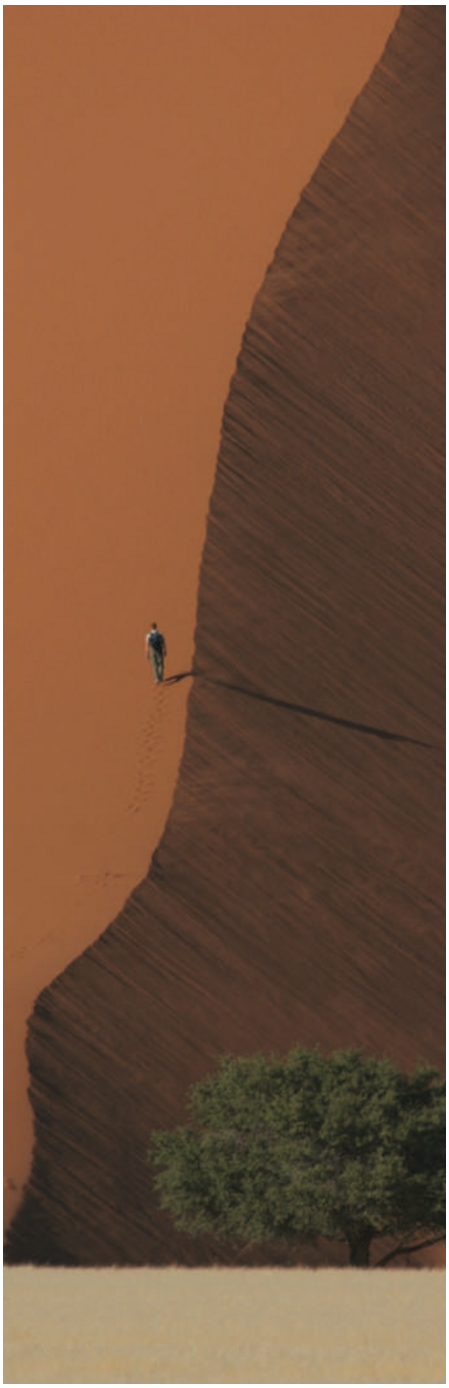
Any encounters with dangerous animals?
No, but while discussing the dangers of doing desert field work in Namibia, my field companion Giles Wiggs told me a chilling story. Climbing a dune in the Kalahari desert to survey the crestal movement, on his own and with no-one else knowing where he was, Giles came across two lionesses sitting under a tree opposite, staring at him. He gently and very slowly backed down and kept very low so the crest of the dune rose up between him and the lions. With their heads craning up to get a better view as he slowly disappeared, he ran like the clappers 300 m back to the car.

What was your personal highlight?
I was training for a marathon during the expedition. Running in the desert is a wonderful experience. Back home, I am constrained to running on one-dimensional trails, but the desert (or at least the interdune area) is a two-dimensional space in which I could just close my eyes and run without fear of hitting any obstacles.

How did you get the samples back?
I brought some 50 kg worth of samples back to Windhoek airport, for which the airline wanted to charge me a ridiculous $2,000 surcharge. Fortunately, I managed to convince one of the airline staff to let the samples through for a fraction of that price — cash paid in the men's room. These are the advantages to working in Africa.

Any ideas for future research projects?
During the trip, we encountered a German desert guide taking tourists from Luderitz at the southern end of the sand sea to Walvis Bay in the north, straight through the heart of the desert. I would like to return to Namibia to collect samples along that route, to find out whether the sand sea has been continuously or episodically active.

This is the Backstory to the paper by P. Vermeesch and colleagues, published on page 862 of this issue.



GILES WIGGS

Top of the dune. To avoid possible sampling bias, all aeolian samples were collected on the summits of large dunes, which involved climbing up to 200 m in the soft sand.

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