

Geological Mapping in South Africa

I spent 9 weeks in South Africa this summer carrying out a geological mapping project. The fieldwork formed the basis of our Part II project which specified a minimum of 28 days in the field making observations of the geology in order to produce a geological map and elucidate the structures and geological history of the area chosen.

A group of five fellow geologists and I carried out our mapping project in the Vredefort Dome which represents the central uplift of the Vredefort Impact Structure; one of the largest and most deeply eroded meteorite impact structures in the world. Our field area was located roughly 120km south-west of Johannesburg. It traversed a section through Archean and Palaeoproterozoic rocks of the Kaapvaal Craton. These represent some of the oldest rocks on earth and record conditions very different from those today. Moreover, the catastrophic deformation caused by the meteorite impact resulted in a range of rock and mineral deformation phenomena that are unique to such large impact structures. The intriguing geology that this area had to offer made this project original and fulfilling.

The project required a lot of planning. Much of this was via correspondence with academics from Cambridge and the Witwatersrand University in Johannesburg. On arrival in South Africa we visited Witwatersrand University to meet some of the academics who specialised in our area. We also met a masters student who was studying the same area as us who we invited to join us on our fieldwork. I feel our extended communication with the Earth Science department of Witwatersrand University will aid future students carrying out projects in South Africa.

We stayed in a guest house near the town of Parys. The land in the area was owned by private game farmers, and the first job was to introduce ourselves to the owners in order to arrange daily access on to their land. They all proved very considerate; showing great hospitality and going out of their way to help us. Many also showed genuine interest for the geology on their land. Over the course of the project, we engaged with the South African culture: attending bris (barbecues) and drinking mampoer (very strong home-distilled spirit) with the local game farmers. We also achieved a local celebrity status after appearing in the local newspaper and being interviewed on the radio.

We were met with many challenges in the field, and I feel that I have learnt a lot from the experience of doing independent fieldwork in a foreign country. The lack of cloud cover during the dry season meant temperatures swung from -3°C to $+20^{\circ}\text{C}$ over the course of a day. The rugged terrain and thick vegetation were also physically challenging. Lastly, sharing the land with buck, cattle, giraffes, zebras, ostriches and rhinos resulted in some amazing, and occasionally terrifying, experiences.

After finishing our project, we took advantage of being in South Africa, and travelled around the rest of the country. We saw many beautiful places, met many amazing people, and had many memorable experiences.

I would like to thank the College for financially supporting this project.