

TRAVELS IN SOUTHERN AFRICA

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Students reading for degrees in Geology at the University of St. Andrews are encouraged to see for themselves as wide a range of geological features as possible and to undertake fieldwork wherever this is practicable. This applies particularly in the honours courses where students are required to submit a dissertation as part of their final year, and the staff responsible make every effort to identify interesting projects. As a result of contacts amongst African geologists, my supervisor was able to arrange a number of placements in southern Africa for members of my class during the summer of 1996.

I was fortunate to be offered one of these placements and it was arranged that I would spend six weeks that summer on a field project in Botswana. I was to work alongside a student from the University of Botswana in Gaborone, to produce a geological map of an area in the south of the country adjacent to a small village called Moshaneng where I was to stay. My journey began in Edinburgh on 31st May and I flew to Johannesburg by way of London and Rome. After two days in Johannesburg I travelled onwards by coach to Gaborone where I joined the local student, known to all as 'Bones.'

In geological terms the main feature of interest to us was the Moshaneng Complex. This is a body of intrusive rock formed as a result of two magmas of different compositions coming into contact with one another while in the molten state. As well as attempting from field observations, to plot the extent of the complex, we were to collect samples of rock which could be examined in the laboratory for their chemical and mineralogical characteristics. Such evidence, together with analyses of rock textures, can provide information about the origins of the rock and the conditions under which they formed and in this case the extent of reaction between the two liquid magmas. The area had been identified as being of interest by local geologists, but detailed information was limited due to resources being directed at other areas of the country which were targets of commercial value.

Mapping in Southern Botswana was pleasantly different to field work in Scotland. In the preceding year I had endured 12 days of more or less continual rain in southern Skye, and I worked through blizzard conditions in the north west highlands near Ullapool. By contrast, conditions in Botswana were as near perfect as anyone could hope for with warm sunshine every day, tempered only by an occasional cooling breeze. My working day began shortly after 6am and finished about an hour before darkness fell, around 5pm.

Besides the climate the countryside was also very different from my home territory. The terrain was relatively featureless, the only landmarks of any prominence being a radio mast and plateau type sandstone escarpments. These had steep sides and stood as high as 100 metres above the surrounding plains. Exposure of the underlying rock was generally poor and the task of recognising

outcrops of potential interest was made doubly difficult by the dense covering of thorn bushes.

Pinpointing one's location in the study area was also difficult for several reasons. Topographical base maps of the area were available but they turned out to be of limited value for geological surveying. In particular their altitude data appeared to have been based on the same mixture of inspection from a distance and inspired guess work used to produce the earliest OS sheet for those parts of the Scottish Highlands which were inaccessible to the survey teams. It also quickly became clear that the topographical maps had not been updated to take account of the network of roads that had sprung up in the area in recent years, or changes in geomorphology caused by natural processes such as flooding. In addition there was the problem posed by the presence of a strongly magnetic doleritic rock which meant that caution was needed before relying on compass observations.

We undertook a preliminary survey of the area as soon as we arrived and began mapping in the second week. To begin with we checked and rechecked all our observations in view of our doubts as to whether we would be able to relocate any given outcrop once we had left it. This meant that progress was initially slow, but as our confidence increased things improved and we were able to complete the fieldwork in the allotted time. The information collected was used to produce a geological map of the area and it was a great relief to learn subsequently that this was broadly consistent with the conclusions reached by the local geologists from the Geological Survey in Lobatse, on the basis of their own observations.

The village of Moshaneng was an isolated place full of interest to a visitor like myself. It was approximately 15km from Kanye, the nearest town, and some three km from the main road. The population of the village was about 300, with surrounding farms and small holdings adding a further 200. There were some public buildings and the odd private house constructed with modern materials, but domestic dwellings were mainly traditional mud huts with thatched roofs and no more than two rooms. There was no electricity, and as far as I could see none of the huts had running water. Cooking was done over open fires or in a few cases on a cooker using bottled gas.

My home was a traditional hut with a single room measuring some 5 x 2.8m. The local primary school loaned me two tables (but not chairs which were in short supply) and these, together with a camp bed, washing up basin and cooking equipment made for a perfectly comfortable existence. The hut's other main amenity was its unrestricted view to the rear over the local football pitch. The local league consisted of two teams, from the east and west of the village, and with no other competition available, these teams played each other every Saturday afternoon. This was a popular fixture and I always had company to share my grandstand view and a pot of tea.

Before setting off on the assignment I had been concerned about how I might be received by the local people especially in the more remote



Callum's home in Moshaneng – a traditional thatched mud hut

countryside. I had been warned that in some areas visitors had been treated with suspicion or indifference, if not outright hostility. I need not have worried. The people with whom I lived were unfailingly polite, generous and as keen to learn about me, my work, and my country and origins, as I was to learn about theirs. Looking back it was the friendliness of the villagers that made my stay in Moshaneng so enjoyable. They accepted me into their community and treated me as an honoured guest. I consider myself lucky to have been able to live alongside them albeit for a short time. They seemed happy and contented and the degree to which they were at ease with their environment left me with many doubts about the supposed benefits of living in a more highly developed environment.

While in the area I made several visits to other places of geological interest and I was able to join some field trips organised by the University of Botswana for its senior students. One of these was to the town of Jwaneng whose fame lies with a nearby geological feature. This is a igneous pipe of ultrabasic rock called Kimberlite. It is in such pipes that diamonds are found for which southern Africa is renowned, and the pipe at Jwaneng is one of the best in the world in terms not only of the abundance of the diamonds but also their quality. It was a sight of the highest interest from a geological point of view and one I was very pleased to have seen.

After completing my field project I continued my visit for a further three weeks. In the first week I visited Zimbabwe and northern Botswana including the Victoria Falls and the Chobe National Park. These were very interesting times as I travelled alone, often overnight and all my company was from

local people. This was very different to travelling with a group of friends. Outstanding memories of these trips are the overnight train to Victoria Falls from Bulawayo where I travelled with a man from Zambia. He was on his way home after working in the gold mines of South Africa. We chatted extensively, and it was very interesting to hear about his way of life; a man who returns to his family once every two months by taking a six day round trip by train over three countries. The other great memory was a bus journey through almost the entire length of Botswana, going from settlement to settlement, picking up and setting down all manner of cargo.

The last part of my trip took me from the most northerly parts of South Africa all the way to Cape Town and Cape Agulhas, the most southerly tip of the continent. On the way I visited Pretoria and the Pilensberg National Park where the highlight was being able to watch white rhinos from a distance of no more than four metres. I continued by way of the Karoo plateau which is another national park by reason of its geological interest. Finally I joined two of my class mates from St. Andrews who were also on projects in southern Africa and we travelled into the area of the Paarl Mountains and the Cape. We visited Stellenbosch and the wine growing regions, Cape Point and the Cape of Good Hope and finally Cape Town and Table Mountain itself. From here we drove along the so called Garden Route stopping at Cape Agulhas where the Indian and South Atlantic Oceans officially meet, and the next stop going south is Antarctica. We then travelled further east to Port Elizabeth before turning northwards and re-crossing the Karoo on our way to Orange Free State and the town of Welkom. Here we toured one of the Witswatersrand gold mines, and descended to 1800 metres to look at some of the seams which are presently being worked. A very eye opening experience.

It remained only to return to Johannesburg and my flight home. I was sad to be leaving such a fascinating part of the world but content that I had done what I could to take advantage of the opportunity to see it all first hand. In particular I had shared the life of an African village to a much greater degree than is possible for most western visitors. In addition I believe the fieldwork gave me experience which will be invaluable to me in my future career.

I would like to thank the Cairngorm Club for the grant which it gave me to help towards the costs of my trip. The award covered my living expenses for the whole of my stay in Moshaneng and was much appreciated.