



Women in Cinema

Gertrude Elles

PRESENTER

The name Gertrude Elles is revered in geological circles. Senior Lecturer in Earth Sciences, Sandy Smith.

Sandy Smith

I first heard about Gertrude Elles when I took a book out of my college library, which was Newnham College in Cambridge, and I found in the frontest piece of the book was the name Gertrude Elles and she'd obviously used this herself when she was an undergraduate so I found out who she was and I asked in the Cedric Museum where she used to work about her and I got some wonderful tales about her.

She was a Victorian geologist and she was a geologist in the time when being a woman it wasn't really respectable to go and do fieldwork, which is the key to geology. She was born in 1872. She went up to university to study natural sciences at Cambridge and she got a first class degree in it, which was pretty good at the time and then she went on to specialise in palaeontology, which is the study of fossils, and quite an obscure branch of palaeontology, she looked at little organisms called graptolites and they're quite weird little organisms. Grapto comes from writing, lites or lithos on rock. It looked as though there were scrawls on rocks, like somebody's drawn hieroglyphs on the rock. They're extinct today. They only existed between about 500 million years' ago and 330 million years' ago in a time called the Paleozoic Era and they evolved during this time so they didn't look the same 500 million years' ago as they did at 300 million years' ago. What Gertrude Elles did was make a study of them through time in different rocks, see how they were evolving and using those different graptolites at different times to be able to date the rocks 'cause the idea is if you get the same graptolite in rocks very far apart, those rocks were the same age. So she was the person that really sorted out this very obscure, but very important group of organisms. In Britain at the time they mainly occurred in Wales so she spent a lot of her time doing fieldwork in Wales, going around with a rucksack and a chisel and hammer and chiselling out rocks. She used to split them apart, find the graptolites in them, make notes about them, study them, and she produced over a time of about 12 years, a treatise in the study of graptolites which you still find it in libraries today and it is taken out and used and used very much for geological mapping. If you can find a graptolite of a certain type, you can find out the age of that rock.

She was recognised by the Geological Society of London in 1900. She got something called the Lyle medal but because she was a woman she couldn't actually go to the Geological Society to collect her prize because women weren't allowed in the Geological Society but when at last the Geological Society, I think 17 years' later, started to admit women fellows, she was one of the first batch of women fellows that were allowed into the Society. She was a very forceful character. To be a woman scientist, and particularly to be a field scientist at that time, I think you had to be. You had to have a lot of courage that what you were doing was correct and to go out into the field on your own. At that time for Victorian women that wasn't particularly accepted as the thing to do and there's wonderful photographs of her with a very long skirt on and boots and that was her field gear with her rucksack on her back, with a very large sort of Trilby hat. She wasn't just a scientist, she worked with the Red Cross during the First World War and she got the Medal of the British Empire for doing it.

She was the first woman to be given a readership, which is quite a high university teaching position in the University of Cambridge. Even in the geology department at Cambridge today she is just about remembered by some of the people who were there with her at the same time. She died in 1960. What Gertrude Elles really pioneered and did, along with other geologists too, was that she believed that fieldwork was the key to good geology. You had to see things in their spatial arrangements and that was the key to really understanding rocks

and that is still absolutely true today. Our laboratory as a geologist is the field. I started doing geology in the late 60s and in my final year as a geologist I was the only woman doing it and then I thought well I've got Gertrude Elles books. I'm still using them. She was a real inspiration. She managed it very well and she did it 100 years before I did so I'm sure I can survive all that too.