PhD Pioneers:
The Living Experiences of The Open University's First PhD Graduates

Oral History interview transcript

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So my name's Liz Currie. I'm a visiting researcher for The Open University speaking on the 7th of April, recording for the project Looking Back, the First OU PhD's Project. So Don if you could introduce yourself and the topic of your, well the rough topic of your PhD.

OK. Well there's, yes my name's Don Aldiss. I'm a geologist. I studied for a PhD in sciences at the OU between 19, September 1974 and May 1978. And the topic of my PhD thesis was granitic rocks in ophiolites.

Thank you very much. So we're going to dive onto the first question, which is a bit of background really. So if you can tell me a bit about where you were born and what your family's contact with higher education was?

Sure. Well, I was born in Norfolk in Norwich in Norfolk, 1952. But by the end of 1953 I'd moved with the family to south Oxfordshire. And so I was really brought up in south Oxfordshire in a medium-sized village there. And family is kind of pretty conventional, pretty conventional middle class really: my father, professional, worked for the Ministry of Agriculture. My family had had some contact with university level education. My mother actually had studied agriculture at university although she, when she was bringing me up and subsequently she was operating as a home-keeper. But I had an elder brother, have an older brother and an elder sister and like them we went through the educational system. We took the 11 plus, as it was in those days, and all three of us went to the local co-educational grammar school in Henley on Thames. And my brother spent some time at Bath University, my sister at the Royal Veterinary College. So yeah I'm by no means the only person in the family to go through university.

And what, sorry did I interrupt you there?

No.

Oh fab OK. So what was your experience of your final years at school doing A-levels and things, did that go well for you?

Yes pretty well on the whole. I was doing subjects that I enjoyed. I was doing the three science subjects and I enjoyed them and I was reasonably good at them. So, you know, so from that point of view that went fairly well. And it had, I can't remember really when it dawned on me that I was a candidate for university. It was quite a usual thing at our school for people to go on to university. There were a small number of people who applied to Oxford and Cambridge each year and quite a large number of people went on to other universities to do other things. So it was a very usual kind of thing in our school. And I can't really remember, you know, other than, you know, it was becoming apparent that I was being reasonably successful as a student and that I could justifiably think of being successful at degree level.

My best subject at A-level was biology and in many ways it would have been obvious for me to study biology in some form at university, but I'd long had an interest in geology and physical geography. I mean this went back really to you know, primary school days. And I can, I suppose in many ways I can blame my mother who is the sort of person who can't walk along a beach without picking up interesting looking stones and pebbles and what have you. And as it happens a lot of our family holidays when I was young were taken on the Dorset coast. Places like Charmouth and Lyme Regis and so forth, which of course had become extremely famous in terms of, well people like Mary Anning, the famous female palaeontologist from previous days. But going on the Dorset coast, what's known nowadays as the Jurassic coast, you really can't avoid geology. It's, you know, whether you're looking at rock formations, the geomorphology of the coast itself or you're looking for fossils along the beach or in the cliffs. I mean it's that.

Coupled with that I found that doing O-level geography, I had a particular affinity with physical geography and really enjoyed doing that very much indeed, it was just something I found interesting and I got on with, you know, geomorphological processes and that kind of thing. And at one stage I assumed

I would do geography at A-level. Then somebody told me that A-level geography was much more about social geography and economics which was something I was much less interested in. So I dropped that like a hot brick. But on the other hand it occurred to me that geology was a possibility for university study because I was quite interested in aspects of it. And I was fortunate that our school was prepared and able to provide O-level geology. So in addition to my A-level subjects, the three sciences, I requested to do O-level geology. And I think, I don't know, there were six or eight of us doing it that particular year. And that just took a year and I passed very well. Again, I found I had an affinity with it and I coped very well.

So when I came to apply to university then I kind of hedged my bets a bit. I applied for biology at some places and geology in other places and in one case a joint honours, geology and biology. And went through a round of interviews and what have you. But I ended up, one of the places that I was interviewed for was Birmingham University, and I visited there and was interviewed. Strolled around the campus and I mean Birmingham University, it's a very typical red brick campus university and I loved it. I, you know, the day that I went I just felt an affinity for it. I thought yeah I like this, I belong here, I can be comfortable here. So in due course I got an offer for that particular degree course. I got the A-level grades and off I went to study geology at Birmingham starting in September 1971. And that worked out very well indeed.

It turned out that my perceived affinity with geology was sort of, had a basis in fact. And it turned out that yes I'm a very good geologist. I was a student but I was a good student and, you know, worked reasonably hard. Enjoyed it and you know, enjoyed university life and was heading for a good degree. So at that point you start to think well what am I going to do after I finish university, after I graduate, and I found that postgraduate studies, specifically PhD studies were becoming an increasingly an attractive option. I was going to get a sufficiently good degree that I had a good chance of being accepted for a doctoral grant, research grant. And I had the interest and I suppose most importantly, I enjoyed university life. I liked being at university. And I was in no particular tearing hurry to get out into the world of work and start earning hard cash. Some people they

prefer the security of beginning to earn and pay taxes and what have you but I didn't feel that. And I thought no, no, I'll give this a try. In some respects it was just the line of least resistance.

It was what I was expected to do, but equally I could see myself fitting into it very comfortably. The only thing about it was that I didn't want to stay at Birmingham. Now that's not because I didn't like Birmingham. I enjoyed Birmingham very much and it had some very good people in the department. Although at about the time I was graduating the professor was coming up to retirement so the character of the department would have changed. But all that aside, I wanted to move to a different university just to get a different kind of experience, to go to a different place. And it could have been any British university. It didn't particularly matter to me. I just wanted to change and also I didn't particularly want to go to London or to Oxbridge. So in the same way for an undergraduate course I'd avoided London colleges and universities and I hadn't bothered with Oxbridge or Cambridge the same applied with postdoc, postgraduate research.

Now in those days and possibly at the present day the most usual thing in sciences for finding a postgrad project, doctoral research was that you studied a list that was published by the Natural Environment Research Council, NERC. The way it worked was university departments would apply to NERC for postgrad grants and they would study the department and the subject and make a decision and had come up with a list of a few dozen projects which they were going to sponsor in the coming year. And the simple thing for people like me coming up to graduation was to simply look down the list and say I like that one, that one, that one and apply for a number of them and just take it from there and usually go for interview and just go through the process and decide if you like them and if they like you and see what you end up with when you graduate.

And that's more or less what I did. I chose three projects. The only thing they had in common, aside from not being in Birmingham, they were to do with igneous petrology - that is the formation of some aspect of igneous rocks. I think each of them involved an element of overseas field work because I fancied just

trying, you know, doing a bit of travelling and getting out and seeing a bit more of the world than I had done to date. When I was an undergraduate we'd done a little bit of overseas work. I spent a summer with students in Italy, at the Italian volcanoes. We had a week in northern France looking at rocks there as part of the course and so on and so forth. So I enjoyed fieldwork. I quite liked what I'd seen overseas, being abroad so I thought well let's stretch this and see how it goes. It also happened that one of the projects being offered was at The Open University, at the OU. And I suppose it's a fair question to ask, what at that stage did I know of The Open University, bearing in mind this is 1974 and the place had only been open for, well five years or so, or four years since I was applying in 1973.

Well I'd had sort of incidental contact with it. I mean I guess it had been in the news simply because it was new and, you know, you hear these things reported on the television or read about them in the newspapers and that kind of thing. I don't remember any of that. I mean it was just a general awareness that there was this university and the open bit had to do with it being open to people irrespective of their educational qualification. But aside from that I'd had sort of minor contact with it in two ways that I can recall now. One, when I was going back to sixth form, I think I mentioned my best A-level subject was biology. Well my grammar school was sufficiently old fashioned to award prizes. They had an annual prize day. And I have before me, I don't know if you can read it right.

Yeah.

But there we have the prize for 1971 for upper sixth biology awarded to myself, Don Aldiss. And curiously enough the book that I was presented, that I requested, because they ask you what you wanted by way of a prize, I requested a copy of Understanding the Earth, which is the Earth Sciences set book for science foundation course S100 and that was published in 1971. It's edited by Ian Gass, Peter Smith and Chris Wilson who were, Ian Gass was the professor at the OU in Earth Sciences and Peter and Chris were on the staff then. And they, very soon after they started the Earth science course at the OU, S100, they commissioned this textbook. There are a couple of dozen chapters,

there are 25 chapters each written by a different eminent scientist and some of the names are extremely eminent indeed. But they got it together in very short order. Reading that, reading the introduction to that book is quite illuminating because they commissioned it because they realised that there was no book in existence that could serve their purpose otherwise.

There are two reasons for that. One is simply that they were doing something that was new. That is a science foundation course at the OU with all that that entails. But the other was that in the late 1960s, the second half of the 1960s, there was a paradigm shift in Earth Sciences. I mean this is of a scale for Earth Sciences which is comparable with Newtonian physics or Einsteinian physics in physics or the discoveries about DNA in biology, in molecular biology, those kinds of things. And what had happened was that during the 1960s the theory of plate tectonics had come along. And this is the theory that the Earth's crust is made up of a series of essentially rigid plates which moved around as separate entities. And a lot of the activity in terms of crust formation of volcanicity, earthquake distribution, all this kind of thing, mountain building, can be related to the movements of these plates. And I mean it has taken over us. It has affected every single branch of it bar none. It gives a unifying framework to the sciences which didn't exist before. It's become common currency.

So, for instance, I mean at the present time there is a volcanic eruption in Iceland and you can say, you can hear on the BBC news being told quite matter of factly that here we have the mid-ocean ridge in the middle of the Atlantic is part of the ocean floor and the west of Iceland is moving towards America and part of the ocean floor to the east of Iceland is moving towards Europe and this volcanic activity in Iceland is a consequence of that movement. That is now common currency. In the early 1960s those statements would not have been possible, nobody would have made them. I mean it wasn't that they would have met with incomprehension, it simply wouldn't have occurred to anyone to make those statements. So that's what the paradigm shift is about, or this particular paradigm shift. So it came to 1969 at the opening of the OU and the formulation of the science foundation course and the science people found that they didn't have a textbook which reflected that paradigm shift. So understanding the Earth

was created because of that. That's rather a longwinded way of explaining the connection with this textbook that was why it was so appealing to me. And it was really incidental that it was from the OU but I think it was the first direct contact that I had with the OU.

A later contact that had came about because as it happened I was secretary of the Lapworth Society. The Lapworth Society is the geological society at the University of Birmingham. Its members are undergraduate students, postgraduates, members of staff, people from outside who are just interested in geology but essentially it's the geological society for the University of Birmingham. And at that time it had a pretty full programme of field excursions but also of lectures held in the department at the university. And it was up to the secretary to arrange those lectures. One of the strategies I developed for finding people to give these lectures was to look at the textbooks that I had found most useful and contact the authors of the textbooks and say would you like to come and talk to us about a subject of your choice. One of these people was Chris Wilson. And so in 1973 or early 1974 Chris came along and talked to us I think about developing an Earth science course at The Open University. As far as I can remember that's what he talked about. And, you know, and that was the first time I'd met anyone from the department of sciences at the OU.

So by the time I came to look for a postgraduate research project The Open University was known to me if not actually familiar. But I knew enough about it to think well, you know, it's got to be worth a try. And so I applied and I was invited along for an interview and in due course was accepted onto the course. And that was quite good. A couple of the things that I remember about that process, a couple of things in particular that I remember about that process, the first was that my professor at Birmingham, he was an excellent geologist and a very nice man but very much an academic of the old school, kind of, to say he warned me off going to the OU would be putting it a bit strongly. But he sort of raised the question in my mind about did I really want, bear in mind I'm his star student for that particular year.

He wanted me to do well. He expected me to do well. But he sort of sounded a note of caution that this was a brand new department, open less than five years: did it have the staff, did it have the reputation, did it have the facilities that really that I would be looking for as a research student? Which you know, that was his duty really, I mean these were fair questions. He didn't know and truthfully I didn't know either, but he was right to raise the questions, but I bore it in mind and I you know, having been to interview and spoken with Ian Gass who was offering to supervise that project and had a look round, had a look round what facilities they did have and what they were planning to get and decided no, I'll go with this, I like this project. There's a lot going for the project and I like the guy, I like the guy. I think I can get on with this bloke Ian Gass. I will take the risk on the facilities. And I was quite right to take the risk. I mean it turned out not to be a problem; in fact quite the opposite for various reasons.

Now at this time there's, it might be worth me explaining a little bit about the nature of the project and why it seemed like a good idea. Granitic rocks in ophiolites. Ophiolites are, for an Earth scientist an ophiolite designates an assemblage of, a rather unusual assemblage of quite characteristic rock types, which in themselves are not very common but as an assemblage you find it in particular defined locations at various places around the world and as time has gone on more and more instances of these have been found. The assemblage dominated by pillow lavas. Pillow lavas are a kind of basaltic lava, the same kind of lava is currently being erupted in Iceland. But with this particular fabric or texture they form pillows round its sack shapes. And what this is, this is characteristic of lava that is erupted under water. The lava comes out of the underwater, meets the cold water and it forms these pillows because it's been cooled very rapidly. In ophiolites you find enormous volumes of these and sometimes associated with sediments of a kind that are found in very deep water far away from land.

There are other kinds of rock and often you find elements of what is called sheeted intrusive complex. These are vertical, essentially vertical sheets of dolerite which is a similar composition to basalt but it's cooled more slowly so it's rather coarser-grained. You find rocks known as gabbros which are again,

a similar composition but they're cooled yet more slowly. They're yet more coarse grained. You find rocks that at allied to gabbros but they have a more magnesium-rich composition. So instead of these rocks, basalts, dolerites, gabbros together are known as, referred to as basic igneous rocks. But very often in ophiolites you get ultrabasic igneous rocks, ultrabasic or ultra [unclear 0:30:03] igneous rocks. And these are always found in this combination, informing these assemblages that are known as ophiolites. And these have been known about for a long long time. I think going back through the traditional literature you can find references to these things. And they were previously rather enigmatic. They were obviously different to any other kind of assemblage or rock around but it was not really recognised what they were. And there were all kinds of theories about them.

Now to really understand the significance of it and in particular in context to this plate tectonic paradigm shift, the key thing to understand is the Earth's crust. Let me step back a little bit and make the analogy between the structure of the Earth and the structure of an egg, an ordinary hen's egg, in the same way that a hen's egg has a shell, it has an egg white and an egg yolk, the Earth has a crust, a relatively thin crust which equates or is equivalent to the shell. It has the mantle which is equivalent to the white of an egg and it has a core which is equivalent to the yolk. And they are very broadly approximately in the same proportions in the Earth as they are in a hen's egg. The big difference is that the Earth's crust comes in two principle types which are fundamentally different to each other.

There is continental crust and there is oceanic crust. Continental crust is the bit basically that we live on. It's the bit that sticks up above the water. It is relatively thick. It tends to be old and complex. In terms of its position it is relatively less dense than the rest of the Earth and it is less dense than oceanic crust. Oceanic crust is uniformly thin. It is, tends to be relatively young. It tends to be relatively simple in composition - those two things being related. And it tends to be denser than a continental crust. And it is found on the floor of the oceans so typically under several kilometres of seawater. So it's actually, although it's known about and it's been known about since the times of the Challenger expeditions,

oceanographic expeditions in the 19th century, it's always been a bit enigmatic and difficult to study. I mean you can say that places like Iceland which is sitting in the middle of the ocean is a part of the oceanic crust but the very fact that Iceland sits about sea level makes it unusual. So it's completely atypical for most of the oceans. What came to be realised along with plate tectonic theory was that ophiolites in all probability represent lumps of oceanic crust. And that as the segments of the tectonic plates that make up the Earth's crust are moved around parts of them have been pushed up above sea level, parts of them have been incorporated into mountains like the Alps or the Himalayas, and within those mountain range you get lumps of oceanic crust which are now represented by this rock assemblage known as ophiolite or ophiolites.

So here we were in the early 1970s, and I might say as part of my undergraduate degree ophiolites got a mention. They got a mention for about half an hour, basically along the lines of you have this assemblage of rocks, not very much is known about them. They are going to be the subject of future study. Watch this space. That was about what I was told as an undergraduate about ophiolites. I'd come across them, going back to the Lapworth Society lectures, I was on one occasion, one of the lecturers at Birmingham, on the staff of Birmingham took me aside and more or less instructed me to contact a postgrad researcher at Cambridge and told me to invite this guy over and talk about his research area. And as it happened he was looking at an area in western Chile, the Sarmiento complex, and he was studying these ophiolite complexes. And so he came along and gave a lecture, a very good lecture, very clear, very cogent, very interesting about the basics of ophiolites.

So as an undergraduate I'd learnt a little bit about ophiolites and I realised they had a place in the evolving tectonic theory. Because basically if you want to understand what happens in the middle of oceans, at mid-ocean ridges, you have a choice: you get a submersible that can withstand the pressures of several kilometres of seawater, you can drill holes at enormous cost with a very limited return because you're basically looking at individual bore holes, or you can go to places on dry land where sections of oceanic crust have been pushed up and left to be studied. As it happens, my supervisor, who became my

supervisor and who was the first professor of the sciences at the OU, Ian Gass, one of his early jobs had been with the geologic survey of Cyprus. And part of his work producing geological maps on Cyprus was to work on the Troodos Mountains. And the Troodos Mountains are one of the best known examples of the ophiolites. They're probably the, well the best example in Europe. And so Ian had hands-on experience with this. He realised quite early on in the evolution of plate tectonic theory that ophiolites and ocean floor were more or less the same thing. He got, he started publishing on that topic so got in ground floor of the research of that topic. And as well as doing his own research he instigated a number of postgraduate research projects. Some of which were based at the OU and one of which was mine.

So yeah ophiolites are dominated by basic and ultrabasic rocks. They represent parts of the Earth's crust and indeed parts of the Earth's mantle for oceanic regions. But within them they have very small quantities, relatively small quantities by value of granitic rocks. Granitic rocks are more typical of the continental regions. And it seemed that if you studied these granitic rocks it would tell you something about the processes going on that generate ocean crust. Something about the processes going on deep under the oceans but also therefore how ophiolites form. And so yeah, yeah I knew a bit about the OU. I knew a little bit about ophiolites and it ticked all the boxes and it looked actually very interesting. And it turned out to be really really interesting. I mean it was an excellent choice of project for me and it was a very good place to study at. I found it, and as far as I was concerned it turned out very well indeed.

Thank you, just what we needed to know so that was great. Just moving on to perhaps a bit further on to your PhD study in the OU, do you have any enduring memories of times within that study period, that three or four-year period that you were doing your PhD?

Well, I do and I suppose yes, I mean I can, I mean there's an obvious division between things that are, that are directly related to the research itself and the nature of the work which was highly memorable in itself for various reasons. And then of course there's like at The Open University itself which was

memorable in its own particular way for completely different sorts of reasons, and partly just as a place to work and a lovely group of people to be with. And partly through contacts with the students, I mean one of the things about being a research student at the OU, being based at Walton Hall, it is that you have a university without any undergraduate students around. So the only contact, pretty much the only contact I had with undergraduate students was at summer school. And I attended various summer schools either as a demonstrator or one instance as a tutor and found it a very rewarding experience indeed. It was a very good thing to do for a variety of reasons.

So different aspects to what you're asking. I suppose to start with the first one, the research itself. One of the happenstances, because this project evolved and it evolved quite rapidly partly for, well entirely for reasons beyond my control but in ways that ended up suiting me very well indeed. The first thing was that in July 1974, I graduated in June 1974 and I was due to start this research in September '74. Now in July 1974 there was a coup d'état in Cyprus. Well this is, I mean Cyprus has a very long involved history about its relationship with Greece and Turkey, does it belong to one or does it belong to the other or is it something of its own, and basically I suppose you can say there are people living on Cyprus who hold each of those points of view and they don't get on very well. But at that time Greece was governed by a military junta. And they encouraged the pro-Hellenic factions in Cyprus to stir up trouble and there was this coup d'état and one of the consequences would have been that there would have been what the Cypriots call enosis which is a joining together of Cyprus with Greece.

The Turkish people took a separate - they're a large minority on the island separated by culture and by religion as well as by language. The reaction of the Turkish government was to invade northern Cyprus and that happened in July '74. They expanded in August '74. So come September '74 it was considered that it really wasn't a terribly good idea for me to set off to Cyprus and try and start fieldwork. I mean it was, I mean the political situation was very uncertain. There were a lot of displaced people. There were a lot of refugees. People were being shifted out of northern Cyprus into the south and vice versa. There were

a lot of very unhappy people about and it would have been extremely unwise for someone like me to just go off and start wandering around the countryside looking at rocks. So that was put on hold for a while.

Ian Gass did a fairly characteristic thing for him. After a month or so, he said I'm fed up with you hanging around the place kicking your heels - because I was doing a bit of reading, I was doing a bit of research but I wasn't being totally active. He said book yourself a package holiday to Malaga and go and have a look at the Ronda Massif.

Now, I mean Malaga, the Costa del Sol holiday destination but it just so happens that the mountains in the hinterland had got an ultrabasic intrusion which forms the Ronda Mountains, the Ronda Massif. And at that time it was not known whether this was an ophiolite or not. It had some of the characteristics but it was unclear from the descriptions in the literature about what it was. So he sent me off for a week on this perfectly conventional package holiday staying at a tourist hotel on the beach on the Costa del Sol to head off into the mountains to look at rocks for a week, couple of weeks I think it was. So I did and that was quite good. And it turned out that no it wasn't an ophiolite; I collected a few rocks but I didn't do anything more with it. But that was quite an interesting thing to do. Quite an insight into the way he took decisive decisions and just said here's some money, go away and look at this. You know, he trusted me enough to just take myself off and do it. To hire a car and do the fieldwork and do the research and let me do it. And that was very characteristic of Ian.

Anyway, things quietened down in Cyprus and eventually I went there the following spring, six weeks or so. Ian had made, he had contact with a postgraduate research post at Cambridge and was getting towards the end of his PhD project. He'd already done a couple of seasons in Cyprus and he knew the place and he knew how the place worked. And so it was arranged that I would go out with him. So I went with him. He did his fieldwork and I did my fieldwork and that went very well. And basically there was someone who could keep an eye on me and if there was any trouble then they could turn to help.

And that worked quite well. As the project was originally formulated I would have done the entire three years study based on Cyprus. But Ian Gass being a very dynamic individual was continuing to make contacts in the research field. And one of the major contacts he made was to set up a long-term research programme in the Sultanate of Oman. Now the Oman mountains have the biggest and best ophiolite in the world. It is the best example there is and it's enormous and it, I can't remember how long or how wide it is but it covers an enormous area of the Oman Mountains.

So he wanted to get people onto the ground to start research there. He had a research student, me, he had a couple of postdoctoral fellows who joined the department to do research, and so he got, he arranged for us to go out there. And this would have been, where are we, 1975, November, I think November 1975. And I set off to the Oman Mountains with, well basically one other chap. We spend several weeks there driving around and looking at rocks and yeah having a great time. It really was very enjoyable. Another one of Ian's contacts was with University of California and he'd got wind of a discovery in the Sierra Nevada in northern California of a newly discovered ophiolite which hadn't been recognised before. And so he arranged for me, basically told me to buy myself a plane ticket and head off to California. We had contact with the UCL Davis and so I pitched up and spent a month and a half there, looking at rocks in northern California. And that was extremely enjoyable. There are a few examples in the UK. So I thought well I'd better, I mean there's one in Ayrshire on the [unclear 0:50:30] coast. So I spent some time looking at that. And so what had, was originally a study on the Cyprus ophiolite, turned out to be a comparative study of a handful of different, spread around the world, slightly different ages. So that all worked out, that all worked out pretty well.

So aside from the fieldwork I was spending quite a lot of time at Walton Hall doing analysis of one sort or another. Part of the misgivings that my old professor had had about the lack of facilities, that was partly founded in truth but he, on the various aspects of studying rocks in the lab, one of the tools is to look at rocks under the microscope, a conventional optical microscope, and to do that you had to prepare microscope slides of the rocks which is a very

standard thing to do and it turned out that because the OU was having to produce hundreds of these things for the undergraduate population to do their studies, they were extremely well geared up to produce any number of microscope slides for me to do mine. So that worked out very well. On the chemical side, if you're studying the chemistry of those rocks there is various standard techniques that you would use. The most common one at that time was x-ray fluorescent, XRF, and a lot of university departments had them. The OU did not. And Ian I think perfectly correctly had opted instead to acquire the apparatus necessary for what's known as INAA: instrumental neutron activation analysis. And this is altogether much more subtle. It looks at the abundance of elements in rocks that are present in very very small quantities indeed including the rare earth elements. And it turns out the geochemical study of rare earth elements was relatively new as well. It's something again I'd learnt a very small amount about as an undergraduate but it was a developing thing for research. So that was new.

So for the basic things, the common or garden things that I'd use an XRF for, I went off to other universities. I spent some time at Bedford College in London using their XRF. I spent time at Birmingham University, back to Birmingham using their XRF and they were prepared to allow the use of those facilities. But for the really interesting stuff we had the in-house apparatus. And this was something that Ian was very very good at, was developing the infrastructure that goes along with the department that provides the tools necessary to do science research. He persuaded people with money to provide money to buy things like the neutron activation analysis. And later on we got one of the earlier version of the electron microprobes, which were then relatively new in British universities, so we got an early version of that which I used. I mean these are, if you consider a microscope slide which in the old fashioned way you'd look down through polarised light, polarised light through a microscope. Well what a microprobe does is allow you to take that microscope slide and zap it with a laser and basically analyse the smoke that comes from zapping it with a laser. So you can do chemical analysis of rock and the individual crystals and sub-crystals in the composition. So you can study these things in great detail.

So, as a project, as a head of department, Ian was extremely successful in getting the equipment to enable his people to do research. So that was very good and that all led on to the usual process of writing up. Again Ian, that was a strength as a supervisor, you know, I would draft sections of the thesis and pass them to Ian and he would write things on them and give them back to me and I would redraft them and so the process would go. And he was very good and some of his advice at that time stood me in very good stead for the rest of my career and it still is in fact. He was, he could be quite acerbic at times. I mean he didn't have a lot of time to spend on these things and he did go through them pretty quickly but if he, he didn't have an infinite amount of patience and I think a remark I prize, he sent back one set of pages with a comment: I don't understand this, do you? Which on the face of it, well you know it sort of took me back a bit at the time but actually it's very much to the point. Because if you as a researcher can't and don't understand something then you haven't got a chance of explaining it. And I mean it's quite a good principle that if you can understand something properly then you can explain it.

That's a fairly well established principle in science, science teaching research but it was there in spades at the end of it, because, and here we get out of my research and more into what the OU was like as an environment in which to work. And it was great, partly because the staff were new, they were all new to the department which had been formed in 1969. A lot of them were young, they were all enthusiastic. And they were all in it both for the teaching and for the research. I mean a lot of university staff, you know, you can I think fairly accuse of being interested in either the research or in their teaching. And one or the other can give way or one gets priority. At the OU, it was always clear both within Earth Sciences and within the science people generally that teaching was extremely important and research was extremely important. And that permeated everything. And people were enthusiastic. They were doing new things both in the teaching side and the research side and that sense of enthusiasm really permeated down.

But also it, there is this ethos of teaching that goes, if you're trying to teach university level subjects, science or whatever else it is to students who are

coming into it with no formal qualifications then you have to be prepared to explain it in a way that is going to be received to those students. You had to adapt your teaching methods and your style to the whole range of students that you're going to be dealing with. And that was just taken, I mean that was part of the, it was like part of the air that you breathe. I mean it was a complete given. Nobody ever questioned that. And I think, I mean I've carried that with me since that if I'm trying to explain something to somebody and they don't understand it it's up to me to explain it in a different way so they can understand it. And that doesn't matter who it is. It can be a university professor or it can be a labourer on my field team in Africa as it might turn out. Or, you know, anyone at all. And so that is a principle that's come with me.

So it was a lovely environment to be in for those kinds of reasons. It was also good because, I mean Earth Sciences at the OU at that time, and maybe since but I don't know the since, but at that time certainly, it was like joining a big happy family. People, I mean a lot of this was down to Ian Gass and his character. He was a very good geologist; he was a very good teacher; he was a very good researcher. He was also a very nice man. He was tough enough and manipulative enough to take on politicians and vice chancellors and the dean of science and all these people and to get his way arguing at that level. And he was very good at it. But he was, everybody liked him because he was just a pleasant bloke to be with. So he walked into the department and there were women, some quite young women doing secretarial work. There were students like me, a few students like me. There were postdoctoral researchers, there were lecturers, there were class assistants, administrative people of one sort or another, and Ian was universally respected and liked. And I think in many ways loved eventually by the people that I knew there. I mean they had a great fondness for him and he was good.

I'll give you one example of the way he'd go about things. He was from the north east, he was from Sunderland I think or somewhere like that and, you know, that can bring a sort of brusqueness to it, brusqueness with it. I'd been off to, I'd done referral work in California and come back and was getting on with work. I happened to be walking down the corridor one day, past his office, and he

shouted at me Don, in here! And I went in the office and he said you're in the shit, sit down! And so I said OK. And so I sat down. And he explained that I had put in an expenses claim for my work in California which had proved to be unacceptable to the NERC administrators who were dealing with the expenses claim and he wanted, basically they'd queried why I had spent so many hundreds if not thousands of dollars on a hire car and really exceeded the budget that they thought was at all reasonable. OK I sat down. My reaction of being told by my professor that I'm in the shit was that this is not great. But anyway I explained and I pointed out that yes I had, I'd got a hire car and I'd gone off into the mountains in northern California. I'd also gone down to, almost gone down to San Diego in southern California to look at another ophiolite which occurred on the coast down there. I'd also taken myself off into the Yosemite National Park because, well if you're passing within a few hours' drive then it seemed pretty silly to waste the opportunity. So essentially I had a few days holiday up there enjoying myself at Yosemite and looking at redwoods and stuff like that.

So I mean Ian sat and he turned me out and I explained all this. And I also pointed out that yes I might have spent a lot of money on the hire car but actually I'd saved a great deal of money on accommodation because basically I'd been getting my accommodation free. So if you looked at the bottom line it wasn't too bad. So he heard me out and he thought yeah well that's all very reasonable. And there and then he got on the phone to this guy sitting in London or Swindon or wherever he was and explained and basically got my back and supported me and took the heat off. And that's exactly what you want from a manager. And my subsequent career has shown me actually how rare that can be. But he was really good. I mean it's a single instance but he was good at that kind of thing. He would stand up to various senior academics. He would fight his corner and the corner of his staff ferociously. But dealing with the people around him, that worked around him he was just, you know, just completely pleasant and always even tempered and fair. So that got him a long way. He also got in the students [unclear 1:06:08] as well, with students at summer schools. They thought he was great. He was a good teacher and they recognised that, they responded to it really well.

So yeah I mean, you know, a lot of it was down to just the nature of the department and I was very fortunate I think to walk in on this situation that was so good. You know, there are other ways which he operated. I mean when they'd, you know, monthly departmental meetings he insisted that everyone went along, research students, secretaries, everybody. Everybody who had a permanent seat in the department went along and could voice an opinion at the departmental meetings. And that was very sort of egalitarian. There was a whole atmosphere with some of the people, everyone was on first name terms and it was all very informal and that was very pleasant.

There was also a sense though of, a lot of university types ending up in Milton Keynes, ending up at Walton Hall, with only themselves in common. So I mean there were people who lived locally, who worked and had their friends and contacts and social life outside the OU, but a lot of the social life and that kind of thing was inward directed, and so there was a lot of self-generated entertainment, lunchtime concerts and people putting on plays. There was the university film club. All these things that, you know, you can take for granted at conventional universities sprang up very quickly and there was a lot of enthusiasm behind them and a lot of people joining in: lunchtime quizzes, all manner of things. So it was the place to be, a good place to work.

Thank you for that. Looking forward, I think you've answered quite a lot of the questions in one go there which is fabulous. Nobody had to hear me in between which was good. But looking forward a bit, did you go to your graduation at the end? I can't remember if I've asked you this already.

No, I didn't. You did ask and I didn't. As it happened I've never been to a proper graduation. Because when I finished my first degree at Birmingham as it happened I got a summer job in northern Canada and so immediately I got the results I was off on a plane and I disappeared. So I never saw my undergraduate degree being presented. And really the same sort of thing happened with the OU in that by the time I'd completed writing up and

submitting my thesis for examination, I'd arranged a job with, well, I had arranged work which took me overseas. So in fact I started work, I started formal work on the 1st of June 1978 with the British Geological Survey. On the 25th or 26th of June I was examined for my PhD. My PhD thesis was examined, viva examination and told on the spot that they had awarded it to me. And one of the reasons they awarded it to me without me going through the palaver of adjusting my thesis was that they knew the following day I was flying to Indonesia. And so I disappeared off to Indonesia for two and a half years and so my doctorate was awarded in absentia because I was out of the country.

How did you feel about that that you got it?

It wasn't a problem to me. I think in both instances I think I probably felt that had I attended a degree ceremony, principally it would have been for my parents benefit. They would have come along and cheered and been very proud and this kind of thing and I would have had my photograph taken with a gown on etc. It wasn't important to me really in the least. I mean it didn't matter.

How did you feel when you knew you'd been awarded your PhD?

Sorry?

How did you feel when you knew you'd been awarded your PhD?

Most relief, I mean because you get to the stage, I realised Liz partway through writing up that I'd done enough work to merit them giving me the degree. And there was a sense that all I had to do was to complete the writing up and, you know, produce a coherent document and get it printed and bound and submitted. And really if I could do that then they would give me it, they would give me the doctorate. And I reached that realisation. You, I mean doubts creep in, and you realise after you've submitted well these are things that I could have written about, should have written about. Yeah there's an area there that I should really have gone into detail. And you start thinking of the questions that the examiners can ask you. And I mean there are some questions that even

now I suppose I'm probably quite glad that the examiners didn't ask me about the thesis, but realistically it didn't matter. I mean I thought then and I think now I had done enough. And it was OK. I mean it's not an earth shattering doctorate but it's useful and it merited the degree. It is still referred to now.

I mean I'm, I one of these sad people who keeps an eye on their citation index and yes my PhD thesis gets referred to in publications. I wrote one published paper on the back of the postgraduate research and that was published in an academic journal, and that's been referred to as well. That's up to 90, more the 90 citations which is, you know, [unclear 1:13:59] something like that which is, you know, it's not too dusty. So, you know, objectively the research was of value in itself so I'm quite glad. But at the time yes, my primary feeling was of relief and that they weren't going to cause problems. And they objected to the quality of my presentation. They said that if I hadn't of been going off to the Far East they would have had me redraft the diagrams. Well OK that's fair enough but as far as I was concerned the diagrams were legible and they still are so whether that's fair enough. And I mean the other thing of course I was about to fly off to a new continent with a completely new job and a new environment. So by that time I had my mind mostly on that.

The irony of this is that in a sense I have attended a degree ceremony. And that came about in the context of something called the Ballad of Walton Hall. Now have you heard of this? You're nodding. OK good. The Ballad of Walton Hall, it was written and performed by the OU Operatic Society as it was then in, let me think, 1976, '77 something like that, '77 I think. Yeah it must have been '77. And the idea was that it, broadly speaking it was an evening of musical entertainment which told the story of The Open University. And the principle was that the people who compiled it, Peggy Aprahamian, the lovely lovely Peggy Aprahamian who wrote most of the libretto, took well known pieces of music, be they folk songs or one of the pieces she used was the song Shenandoah, going right through to classical music of one sort or another, she used Beethoven's Ode to Joy for one of the pieces. And she set appropriate lyrics to it which taken as a whole told the story of, it started off I think with, it was sort of pre-Victorian times where the heroes [unclear 1:17:03] the

uneducated had no chance at all of secondary education let alone tertiary education, and went right through to the formation of the OU and Walton Hall, this kind of thing. And it was all very fun and I helped with that. But one of the pieces later on was a mock degree ceremony and I was one of the students who put on a mortar board and gown and waved a degree certificate above my head as part of this performance. So that is the closest I have come to a graduation ceremony.

[Unclear 1:17:50]. Looking back and reflecting on your doctorate, achieving your doctorate do you, you know, what extent if any do you feel it changed your life?

It did change my life in various ways. I mean fairly sort of generalised, I mean kind of well not nebulous ways but non-concrete ways in a sense. I suppose the first thing to say is that when I was coming towards the end of the doctorate project and I was looking around for work, I decided then that I didn't want to continue in universities. I mean it would have been a possibility. I mean in fact Ian Gass again doing what good supervisors do was sort of lining me up with potential postdoctoral fellowships and that kind of thing. But I could see that if I went down that route then I would have so many years of getting fellowships for maybe six months, a year, two years if I was lucky and then I'd always be in the position of having to look for the next position. I'd always be in the position of getting onto the academic rat race of having to publish papers, to write things up. And I didn't really want to get into that kind of environment in the same sort of way, in a sense, I mean going for a PhD project had seemed like an obvious choice, but going on to postdoctoral research seemed a lot less obvious and a lot less desirable. So I looked for conventional work instead and one of these things was to join the British Geological Survey. And again at that time they had a very active and very popular overseas division. So I applied to them to join one of their projects overseas.

I'd had some contact with these people, going back to Oman and the fieldwork in the Oman Mountains. We'd had a visit, myself and the postdoc researcher who were there in the mountains, we'd had a visit from two senior people at

BGS. At that time it was IGS but we'll call it BGS because that's what it's now called. And they were in the area and it was reckoned to be part of their patch in an administrative sense and so they came to visit us in the mountains and we showed them some rocks and explained what we were doing and that kind of thing. So I'd had a bit of contact with them, including a chap who subsequently became one of my senior managers. And whether it was through that contact but more likely simply because he was a person who had hands on experience with ophiolites and the project that I joined was making geological maps of northern Sumatra and Indonesia and one of the things they had stumbled across as part of that project was ophiolites. So they thought it was quite useful I think to have someone like me on board to join the project to bring my particular expertise to them.

As it happens that came to nothing at all because the ophiolites petered out before I got to them. And so I looked at something else entirely and looked at a super volcano instead, the Toba super volcano which has got its own fascinating geological history which I could talk to you at the same sort of length as I have done about ophiolites but I won't bother. I won't tax you with them. And that was the beginning of a career in BGS making geological maps broadly speaking. I mean I did other work for them as well but broadly speaking I spent most of my time making geological maps: firstly in Indonesia, latterly in Botswana. I spent seven years in Botswana. Then in the UK, I spent some time there. I spent a couple of years in the Falkland Islands. If you want a map, a geological map in the Falkland Islands, it has my name on it. And that was very good, and various parts of eastern and northern southern England.

So I eventually, I stayed with BGS until I retired. I retired from full-time work in 2014. And so that served me very well. And really the ostensible subject of my PhD, ophiolites and related matters, have come up hardly at all, barely any direct relevance; in fact I was given the opportunity to work on a BGS project in, I don't know, 20 years ago, something like that, in the northern part of the Oman Mountains and I said no thank you very much, this is old stuff, this is, I've been too long away from it. I don't want to go back to it thank you very much, I've moved on to other things.

What it has stood me in very good stead with though are, I suppose a set of attitudes of, that go along with the OU style of teaching. I've talked about the explaining things and you tailor your, the way you're explaining things to who you're trying to explain it to. That principle has stood me in very good stead. Something that the OU had to develop consciously or not right from the beginning was systems. And joining the OU in 1974 exposed me to systems for distance learning and research which had been constructed from the ground up. So if you want to write an OU course then you don't just sit, you don't have someone sit down with a typewriter and write it, you develop a course, you develop objectives, you develop all the paraphernalia that goes with it, the printed material, the television programmes if necessary, the experimental kits, everything that goes with it. The CMAs, that TMAs, the ways of generating those, the whole tutorial system, the summer schools, all these things are systems and they've all got systems underpinning them and underlying them. And I can see this operating and that knowledge I think has stood me in good stead in developing geological projects over the years in various, of various sorts and sizes and environments.

There's the scientific side of things and the thing is about a PhD project, I mean it's my view on PhD projects in Earth Sciences anyway. I can't speak for other disciplines. But in a sense it doesn't really matter what you study so long as it's relevant and you are interested in it. Because what you're principally learning how to do is you're learning how to do research and all the skills that go with that. Be they library skills or research or writing up skills or the skills that go along with learning about new analytic techniques or interpreting data or handling invariable data or whatever it is, generally designing projects to address scientific questions. I've used those principles over and over again in large ways and small ways in all different parts of the world. And in a way I continue to do it even in retirement. So yeah I mean that's stood me in very good stead.

I think those are the ways really. I mean it would be nice to say that I became part of the OU family but I didn't really. I mean I was part of it for a while and it

was great and it was great to see it in action both at Walton Hall and at summer schools. I attended science summer schools at Leeds University. I went to science foundation summer schools at places like Stirling. And this was great because it was well, you know, it was seeing OU students in action and seeing their enthusiasm and their, you know, their thirst for learning. I mean it is a cliché but my goodness they loved what they were doing and they were really committed to it in a way that I'd found undergraduate students at Birmingham simply weren't. You know, undergrads at Birmingham, myself included really didn't know the value of what we were being presented with. I think OU students by and large do. And that was great to see. So yeah the OU has stayed with me in these sorts of ways.

[Unclear 1:28:48] important thing that the OU instilled in you and helped you in your later life which is a really nice thing to hear and I hope it continues to be like that for you.

Thank you.

Is there anything else you want to say about the OU before we stop recording?

I suppose the, I mean one of the aspects of it that, because I saw in, at arm's length in a way, was the kind of, what's the word, not political exactly but the ideological aspect of it. I think, I mean the OU clearly is a product of the Labour government. It was set up and famously Jennie Lee and all the rest of it. And it's a very, it's a very socialist thing to do. And it was hardly surprising I think that some of the staff there were, they carried their socialism with them. I mean they came to the OU because of that and they carried it with them. Not very much within Earth sciences, I mean there were some individuals who were clearly, you know, it was absolutely clear where their political sympathies lay. Mostly not, I mean I couldn't tell you, most of the members of staff, Ian Gass and any of the others mostly I couldn't tell you how their political sympathies lay, except that in a general way yes, they clearly agreed and supported and

wished to prevaricate the fundamental idea of broader education and to share that out. It was quite, I mean it was quite fun.

The dean of science for instance, he was a very interesting character. He was a South African physicist. He was passionately involved and very practically involved in nuclear disarmament. I think he had been involved in the Pugwash Conferences to do with early stages of nuclear disarmament. On one occasion I saw him on a Saturday morning in Bletchley, him and a few others, talking to the crowds on some kind of political platform. It may have been coming up to a general election or something like that, I can't remember exactly. But, you know, he was spouting in a very party political quite far left socialist sort of way of speaking. And there were people there who were, you know, I think probably members of the Communist Party with whom I was very friendly, I liked very much. And I sometimes rather wonder whether as a consequence I had a file at MI5. Whether I do or not is of no consequence and it would be in my case a very slim file and a very boring one I dare say. But, you know, these sorts of things were going on in the background so I saw them happen. Yeah so interesting place for various reasons yeah, various reasons.

[Unclear 1:33:09] vital and interesting time to be there for you.

Well yeah personally it was because I mean I was, you know, this transition from being an undergraduate to being something, a scientific researcher really to being an Open University person. I mean it was obviously a very interesting time in the evolution of the OU and they were doing a lot of things very quickly and getting a lot of it right in a fairly exciting sort of way. But, I mean I joined, I think I was the third full-time internal research student in Earth Sciences. There were other students but I think they'd started their research projects at other universities like Leeds University where Ian Gass was previously. But I came in and because there weren't any undergraduates there and because there were relatively few postgraduates then really I found myself kind of joining a family of people in a way that wouldn't have been possible at a conventional university. Well it wouldn't have happened at a conventional university. And in the years following me, when the numbers of research students became a lot larger quite

quickly partly because of this big research project in the Sultanate of Oman. The research students often didn't kind of join in and kind of join the family in quite the same way, they became their own little subgroup in the department, and I was never part of that subgroup. I was much more sort of rubbing shoulders with lecturers and research assistants and course managers and what have you and finding about their work, socialising with them to some extent and joining in with them.

Thinking back to when I was coming up to the completion of my research project and writing up and looking around for jobs I did speak to a few people about getting a job at the OU as a course team, course assistant or a course manager. And that was attractive to me, partly through the nature of the work. I thought it was interesting work helping produce these courses. But also simply I enjoyed being at Walton Hall so much. It was such a nice place to be. And the people around me were so pleasant that it was just a thoroughly nice environment to be in. Now I mentioned this to Ian Gass, that I was thinking about applying for one of his course manager posts and he sort of grunted and said well I thought geology had really got you by the balls but if you really want to do that then I suppose you'd better. So he didn't, that was quite surprising for him. As it happened though I knew someone who was a senior administrator in the science faculty and across whose desk these applications were passed and she was much more to the point. She told me that if she saw my application on the top of the pile she'd take it out and put it in the litter bin. Not because she didn't want me to work there but because she realised that I had, you know, I had more science to do basically. I mean I had more scientific things to do. I mean had I, I mean I would have enjoyed the work I'm sure but it would have been the end of my scientific career. So yes I mean they were perfectly correct to discourage me in their different ways. And yeah, I'm glad I moved on but move on I did.

END OF INTERVIEW