

RAY ADIE

Edited transcript of interview with Ray Adie conducted by Jaap Verdenius, BAS archives AD6\_24\_3\_19\_1. Recorded on 4th February, 1993. Transcribed by John Zarfahs on 1st March, 2020.

[0:00:14] Adie: Well when – well what I was saying was that when you are very young you haven't had sufficient experience of working in a place like that or even experience of life to appreciate the possibility of dangers, so you often do things that and you haven't any regard for the fact that by doing those things by doing something stupid perhaps, you may just suddenly die. But somebody who is older thinks things through very much more clearly, and they're much more cautious. They've also got much more experience of life and travelling and so on and so forth. Now see one of the things that you've got to also remember here is that I was born in South Africa, and so all my life up until the time I went to the Antarctic in 1946, I'd lived in a sub-tropical climate. I'd only ever seen snow once before, and I remember we went it was on the top of the hills around the town where I lived, and we actually went to see the snow but by the time we got there it had melted, so I hadn't really been in snow and ice until I went to the Antarctic, so I knew nothing about snow and ice.

[0:01:55] Verdenius: How did you get involved with Antarctica [overtalk]?

Adie: Well I got – how I got involved was, first of all that when I was at school one of the set books I had in English was a book called *Edward Wilson of the Antarctic*. Now Edward Wilson was one of the people who was with Captain Scott, one of the people who died on the way back from the Pole, and this was a biography of Edward Wilson, and it was extremely well written and it fascinated me, now that was the first thing; and the second thing was how I got really involved in the geology of Antarctica was that when I was a student one of the people who visited us regularly was Doctor A. L. du Toit who wrote a book called *Wandering Continents*, and he was one of the early people to talk about continental drift, and write about continental drift, and of course as a student he used to ask us lots of questions and 'What are you going to do for a career?', and one of the sort of answers that each one of us gave him was 'We would go and work in the Geological Survey', and he said, he was one of the people he said to me 'Well, why go and work here, why don't you go and do something interesting, why don't you go and work in the Andes in South America or even in the Antarctic?'

[0:03:53] Adie: And then the opportunity came in 1946, when I was still a student in South Africa, that they wanted a geologist for the Falkland Islands Dependencies Survey, and we just merely sent a telegram and said I was interested, and I was just given the job, just like that. And within a fortnight I was here in England seeing all the people who were involved in Antarctic matters and then the next thing is we flew down to South America and then went by, well to Montevideo then went to the Falkland Islands by ship, and then in late 1946 here we were in the Antarctic, and the first time I saw any snow was here, in the South Orkney Islands, and Signy Island, and this is how one becomes involved, and of course the whole of my life was literally changed, completely, by a decision that was taken probably in about five

seconds. If I hadn't have done this I would have been doing something uninteresting in South Africa, and I'd never ever have had the opportunity of becoming involved in Antarctic earth sciences, in international science, in the more academic aspects of Antarctic geology.

[0:05:41] Verdenius: Do you remember this first impression of going to Signy Island seeing snow?

Adie: Well, yes, I do, I remember it vividly, because there'd been a snowfall just the night before we got there, so everything was just white and here was this very fluffy snow, and I know the first thing that I did was to just dive onto the snow surface and just sink into the snow like that. Then I realised that for the next two years at least I was going to be involved with this white fluffy stuff wherever I went. But you see one of the things that I was talking about earlier and that was I spent three and a half years down here in the beginning – actually it should have been only two and a half years, but when I was down here at Stonington Island the ship couldn't get in to relieve the base to take people out because of the pack ice, and so we literally had to be there for another complete year before we were actually flown out; this is when the first aircraft were brought in here to the Antarctic, and that was in 1950. So you can see how things change.

[0:07:29] Verdenius: Were you involved in building the first base site?

Adie: No I wasn't, I wasn't involved in building the first, any of the first base sites because those were put down in 1943, put 1943 and 1944 because that was during the war and the work that was done down here in those days was a naval operation called Operation Tabarin. Most of the people, possibly except one or two were from the services from the army or the navy, and those early bases were built here in 1943, and they were built mainly to act as meteorological stations to see the weather that was coming up from the Antarctic because you know that all the weather in the Southern hemisphere is generated in the Antarctic and moves outwards from the Antarctic, and of course at that time various of the German ships from the German navy were operating in the South Atlantic and they actually destroyed more than half of the whaling fleet that was also operating in the Antarctic, and various naval ships actually went into places like Deception Island which is here, in the South Shetlands, and they actually blew up tanks from the old whaling factories which had been put down there between 1900 and 1910, and the factory at Deception Island, whaling factory at Deception Island was blown up and the one at Signy Island was dismantled, so that these couldn't be used by the Germans. We do know that the German navy used some of these harbours and so on, so that's how it was built up.

[0:10:08] Adie: And then when the war finished in 1945 Operation Tabarin became a civilian organisation. There were still military people involved, but it became essentially a civilian organisation, and I was one of the first of the civilians to become involved. And also of course the scientific disciplines were expanded. See, in the early days these were meteorological stations, so all the people were involved in making meteorological observations. Then in 19, late 45 early 1946 there were a few other people, for instance a geologist from the British Museum was down here, and he worked for a year. And then the

science was expanded, zoologists and geologists and so on were brought in, glaciologists, so it went from a military organisation, or a naval operation to a civilian operation, and then it continued as the Falkland Islands Dependencies Survey.

[0:11:44] Verdenius: Did that change, comprise more changes in the setup in Antarctic days apart from that scientific work was brought in?

Adie: The most important change was that civilians were brought in to the organisation, and people who had been in the services had virtually disappeared by 1947. In fact when I was there first in 1946/47 there was quite a lot of people from the army who were involved here, I mean people of quite high rank, majors and colonels and so on and so forth, but most of those people hadn't any knowledge of science; they were the people who were running the outfit, so that was the big difference.

[0:13:07] Verdenius: Was there a division of tasks...

Adie: Well, er...

[0:13:14] Verdenius: ... between those two groups?

Adie: Well most of the, ex-military people were people who for instance went sledging to make up a party. Now some of those military people had been involved in survey work during the war, they were surveyors, several of the surveyors down here had been in the army during the war, and they were sort of the last of the military people. But with all the tasks on one of the bases everybody was involved, there was no discrimination, there was no sort of demarcation line between those who had a military background and those who had a civilian background. All jobs had to be done by everybody at some time, it didn't matter whether it was the cooking that had to be done, or getting rid of the rubbish or feeding the dogs, or sledging and camping and everybody was on the same level.

[0:14:42] Verdenius: How much, what kind of contacts did you have with the outside world?

Adie: Well we had radio contact through the Falkland Islands.

[0:14:57] Verdenius: This was Morse?

Adie: Morse – well everything was Morse then, we did have R/T, but this was really the sort of R/T that was used during the war, 'cause most of the radio sets, transmitters and so on were ones that had been used in the navy or the army during the war, so the R/T wasn't very good, and anyway in a place like the Antarctic you had very peculiar ionospheric conditions for transmission and reception. This is one of the things that has been studied, the ionosphere has been studied in great depth in the Antarctic. So we did have, we could receive on the radio the BBC, because the BBC had a special service beamed to South America and here we were due south of South America so we could get the BBC, so we could get the news from the outside world every single day if we wanted it, but most importantly we could get the time signals for the survey work as well, 'cause you do need the Greenwich Mean Time

signal, or Washington signal because if you're doing survey work your longitude depends on the exact time.

[0:16:48] Verdenius: Did you have reliable equipment for that locally?

Adie: Well we had chronometers, but chronometers drift, so if you suddenly at the end of a year you might be anything 20, 25 seconds out from the correct time. And of course for navigation you need the time because if you're going to take star shots or sun shots, you need the exact time.

[0:17:21] Verdenius: But if I understand you rightly that means that also when you go on an expedition you need to do your work, you needed to receive the BBC?

Adie: Well, the BBC is virtually the only, or at that time, was the only radio transmission that you could receive in the Antarctic. You couldn't receive anything from say South America or South Africa or Australia down here because it wasn't beamed in the right direction but the BBC was actually beamed specifically to South America, called the Latin American service on the BBC. But also you see one of the other things that is important in sledging for instance in the Antarctic is knowing something about navigation, and surveying and so on, well as a geologist I'd learnt all about survey work and navigation and so on when I was studying, so this wasn't a problem for me, and, for instance, when Sir Vivian Fuchs and I worked down in George VIth Sound he also knew all about navigation, he also was a geologist, so here there were two of us working together, he's a geologist, I'm a geologist so we knew all about survey work and navigation, and so we spoke exactly the same language. We had a great deal in common with each other, and so it was easy to split the tasks. I mean for instance I would do the navigation one day and he would do it the next day, but then of course you have to rely very much on how good the person is and you must be rely implicitly on that person's ability and accuracy and so on, but there was no problem because we trusted each other and we knew how well each other worked.

[0:20:03] Verdenius: How do you make up an expedition in that time because you went on expedition with Sir Vivian Fuchs who was [overtalk] well there's almost totally unmapped country and how do you set out a goal?

Adie: Well, here, [rustling of paper, probably map] let me take as an example the work we did in 1947. We had a station here at the northern tip of the Antarctic Peninsula, we had one here in the Argentine Islands, we had one down here at Stonington Island, and then one up here at Port Lockroy and then one in the South Shetlands at Deception Island. The most important thing that we had to do, because most of the west coast down to here had been mapped a long time earlier by the people who had been doing sealing and whaling had been mapped from the sea, but on the east coast there is an ice shelf, and also in the Weddell Sea there's a great deal of pack ice and ships don't go into the Weddell Sea very often or didn't go into the Weddell Sea very often. Today with icebreakers and ice strengthened ships yes, they do go. So the priority was in fact to map the whole of the east coast of the Antarctic Peninsula. So while we went from the northern tip from Hope Bay down this east coast so far to here, another party went from here across the plateau to the east coast and went down

there and back again. So literally in the end of 1947 the beginning of 1948 we were able to map most of the east coast of the Antarctic Peninsula. Now those were the objectives.

[0:22:40] Adie: Now when I was here at Stonington Island in Marguerite Bay the main objectives were to correct the survey of Alexander Island, and also to do the geology because nobody had done the geology down here. For instance we didn't know, we knew that the sound existed, George VI Sound, but we didn't know how it got there, we wanted to find out the nature of that sound, we wanted to find out the nature of the very high mountain range on the east coast of Alexander Island, we wanted to find out what sort of rocks were down here, we wanted to find out the relationship between the Antarctic Peninsula and say South America, because you can see from the map here that the Antarctic Peninsula is linked through the South Shetland Islands, the South Orkneys, the South Sandwich Islands, and South Georgia to South America, and we wanted to be able to see how the geology in the Antarctic Peninsula was related to South America, because people as long ago nineteen hundred and ten were saying things like this peninsula, the Antarctic Peninsula, is a mirror image geologically of South America.

[0:24:40] Adie: Now this of course is quite true, we've now discovered this is so, so here in South America there are the Andes mountains coming down. Now here, in west Antarctica this is an island arc through South Georgia, the South Sandwich Islands, South Orkneys, South Shetlands, the Antarctic Peninsula is the 'Ant-Arc-Andes', and then these go right the way across west Antarctica, and then up into New Zealand on the other side. You see Antarctica, as we have discovered over the years, Antarctica is two parts geologically. This part here, east Antarctica, geologically is exactly the same as southern Africa, India, Australia, and you can fit all of the geological sequences into exactly the same pattern. Everything that we find in west Antarctica, including the Antarctic Peninsula is related to the Andes. So we have two great contrasts; now one of the things that had to be found out was the relationship between these two parts of the continent, and also how the thing fitted together in the general scheme of continental drift.

[0:26:25] Verdenius: But, if I got it right it's 1946 still. The theory of continental drift was not yet very established...

Adie: It wasn't established.

[0:26:35] Verdenius: ...???[inaudible] much common sense I believe ???[inaudible plus overtalk]

Adie: Exactly, when I was a student in South Africa we spoke a lot about continental drift because people there, like Dr. du Toit, had done a lot of work on continental drift, for instance he had done a geological comparison between Africa and South America and had shown how they fitted together geologically. But when I came to England, and people in England didn't believe anything about continental drift; it was only in about 1955/56, when the geophysicists started working on the problem that people started believing that there was something such as continental drift. Well today we don't call it continental drift we call it plate tectonics, which is only a bit of a modification of continental drift.

[0:27:49] Verdenius: But when you went there were you convinced of the theory of continental drift?

Adie: I was absolutely convinced, yes, because I knew people who had been involved in the research, I'd read a lot about ideas that had been put forward by people like Wegener way back at the beginning of the century; I'd read the ideas of the first geologist to really do any useful work in the Antarctic – this was Ferrar, who was here in 1901 to '3 with the very first Scott expedition, and he wrote about the fact that when they collected rocks from this part of Antarctica, that he could see great similarities between those rocks ???[incomprehensible] and particularly the fossils that were found in them. He could see great similarities with other of the Southern hemisphere continents. And for instance the discovery of coal in Victoria Land; when these coals were analysed they were found to be very similar to the coals that were known already from South Africa and India.

[0:29:20] Adie: And so certain people were quite convinced about the fact that there were these great similarities between various parts of the Southern hemisphere. I mean for instance if you look at South America, we were talking just now about the mirror image idea between South America and the Antarctic Peninsula. If you look at South America there is the eastern part of South America, that's Brazil, and Paraguay and Uruguay and so on and that is the continental shield, and then the Andes which have been built onto that continental shield. Now this, the situation is exactly the same here, and here are the Andes, there's the continental shield, and it had been built on. So this is a very specific event in geological time, and once you start piecing all of these stratigraphies and structures and tectonics and so on together, this is how you find out whether things are right or whether they're not right. And of course the more people are convinced that there is an Earth process such as continental drift the more you get involved in believing even more and more in the truth of what you are doing. But it was the geophysicists who first of all came up with ideas of how it's possible for great continental masses to actually move. That's the ..... [rustling of paper map]

[0:31:32] Verdenius: There were two on the expedition, you and Sir Vivian Fuchs, were you working on the same research at that time?

Adie: Well we were working together, we were working together. You see he was a different sort of geologist to me. My main interest was in the igneous rocks, the ones like granites and volcanics of different descriptions, but his main interest was in sedimentary rocks and fossils, and also of course I was then interested in the chemistry of rocks, and so I was the first person in fact to do a proper geochemical study of these rocks here, in the Antarctic Peninsula, and set up the sort of standards. See, previous to this people had just gathered bits and pieces of rocks from different places and never bothered to look the thing systematically, well here it was possible for me to look at things systematically and gather suites of rocks together, and discuss them and so on and so forth from a chemical point of view, from other points of view and so on, but Sir Vivian Fuchs concentrated more on the sedimentary rocks and the fossils. But of course this didn't mean that I hadn't got any interest in the sedimentary rocks because every Earth scientist has got to have an interest in every aspect of

their subject, and if you're going to a place like the Antarctic you may only have one opportunity of making proper observations and collecting rock specimens and so on, because nobody else may ever visit that place again.

[0:34:05] Adie: So you've got to do everything. Like for instance you see when we were sledging down here we were making but between us and yet it shows how important it is to have a good general scientific background education, in other words to know something about botany and zoology and geology and surveying and glaciology and meteorology, because if you've got a good scientific background with a reasonable knowledge you can do all these things, and do them reasonably well. You may not be able to carry the research through to the very end when you might have to get a specialist involved, but at least if you collect the material and you make the proper observations at the time, you can then hand that on to somebody else. So really the thing when I was working with Sir Vivian Fuchs here, he had a very good, a broad knowledge of the natural sciences, and I had a reasonably good knowledge, so together we were able to do everything; we did the meteorological observations, we made the maps, we did the geology, we collected samples for glaciology and the like, we didn't do any geophysics in those days, because it involved a lot of special, very specialised equipment, and anyway geophysics hadn't been at all well developed at that time.

[0:36:06] Verdenius: Can you give me an idea of what equipment and what things you took along? So what was your expedition, what did it consist of materially?

Adie: Well, for the field work, we lived in a hut, that was the base, and not all that much went on at the base, the meteorological observations went on, and writing up of reports and so on but most of my work was in the field.

[0:36:50] Verdenius: When you went on the expedition to ???[incomprehensible]

Adie: Down here?

[0:36:54] Verdenius: Correct.

Adie: Well, we left the base. We had two sledges, Nansen sledges, we had two dog teams, we had one pyramid tent which was only seven feet by seven feet, which isn't very big. We had all our food for ourselves, we had all the food for the dogs; we had paraffin for our stove for cooking. We had very important things like a shovel to shovel snow – two shovels to shovel snow, and that was literally it. The scientific equipment that we took with us was minimal because what does a geologist need for this sort of work other than one or two very good hammers, compasses, chronometer, and that is about it – and good maps to work on. But we were making the maps so we thought they were pretty good. In these very early days the equipment that we took in the field was very primitive. We didn't have any fancy equipment like magnetometers and gravimeters and so on – oh we did have theodolites for sun shots or star shots. This is to fix our position, but most of our navigation was the same as you'd navigate a ship.

[0:38:52] Verdenius: And, theodolites is quite a big thing?

Adie: Well, it's big and of course if it gets damaged, if a sledge turns over and the theodolite gets damaged it's no use to you anyway, you might as well throw it away.

[0:39:12] Verdenius: You were three months on the Shelf.

Adie: Well, the journeys that we did down here were over a hundred days, so that meant we had to carry enough food for ourselves for a hundred days, and also enough food for the dogs, but of course it is possible when you're travelling on sea ice, that there are cracks in the sea ice and seals and penguins come up through the cracks, so if you are able to you can kill a seal and feed the dogs with it, so this saves other food, but here all of the ice was shelf ice the same as down the east coast of the Antarctic Peninsula, and it's quite thick and of course seals and penguins don't come up through it. So you have to rely on the food that you've taken with you. You see in those very early days things were very primitive compared to today. It's possible today to take to the Antarctic very sophisticated equipment to have in the field, very good lightweight transistorised radio equipment and so on, we weren't in that position in those early days.

[0:40:49] Verdenius: When were you for the last time in Antarctica?

Adie: When? In 1984, because I retired, I went in October 1984 and I came back in February 1985 and I retired at the end of February 1985.

[0:41:16] Verdenius: Would you consider going back now if you were asked to, if you had the opportunity?

Adie: Well, it would be interesting to go back, but the thing that I feel is that, I know all about the modern equipment that is being used and so on and so forth, and its very presence tends to spoil the, perhaps I should say the hardship, the hazards of the very early days. You in those very early days you had to put a lot of physical effort into achieving something. Today you don't, not the same kind of physical effort; it's a different situation altogether. You see it's a very easy really to go back to the Antarctic on a tourist ship. You can be a lecturer on a tourist ship and you have all sorts of people, perhaps a hundred or a hundred and fifty people who've paid good money to go to the Antarctic and it's nice to be able to talk to them about the scientific aspect of what has been done in the past, and what still has to be done, to inform them, but then they also expect to have more than just their value for money they want full value for money, so those people, the tourists, really want to hear a bit of reminiscing about the early days. But you see those tourists also seem to have the idea that if somebody is an Antarctic explorer they automatically have a long beard. But the thing that was once said to me by somebody was this, that an Antarctic explorer's experience is frequently inversely proportional to the length of his beard – do you see what I mean?

[0:44:12] Verdenius: Yes. Do you think that's true, is it?

Adie: Well I think it often is true, yeah.

[0:44:25] Verdenius: Well I ask you the question because I get the impression that the difference between the modern situation where with a lot of advanced techniques and the situation wherein you were in the Antarctic is quite an essential difference.

Adie: It's completely different, but, you see, having been in this business from 1946 to 1985 I more or less grew up with it, so I went from the very primitive techniques right the way through to the more advanced techniques, because just make a comparison, in 1967, no let me go back, in 1910 Captain Scott manhailed with his party from Ross Island right the way to the South Pole, actually manhailed and the tents they used were not too dissimilar from the ones we used; but in 1967 I flew from the same place at Ross Island, up to the South Pole in a C130 in four hours without any discomfort, and I just got out at the South Pole, and there beneath the snow was the American base, and I didn't experience any discomfort at all, yes it was a little bit cold at the South Pole, colder than at Ross Island, but that is the analogy, and that is the difference between the early days and now. It's completely different, but I've had the opportunity of, fortunately may be, of growing up with the advancing science, and the advancing technology to go with it, and the use of aircraft instead of driving dog teams; today there are motor vehicles, Sno-cats and Skidoos and so on and aircraft on skis and advanced radio equipment and very advanced, technologically advanced scientific work going on, experiments designed to achieve one objective, and one objective alone you see. It's a completely different attitude. But, you see I think there's another side to this whole question and that is, I mean why do people like me go to the Antarctic? I didn't go to the Antarctic to become an explorer, I went to the Antarctic to do research, to make a contribution to the knowledge of the geology of Antarctica, in other words to the geology of Planet Earth, and it was only as an incidental that I literally became an explorer by going into places where nobody had ever been before, and it's all very well for people to go and do this sort of work, but the most important thing is to write up, complete the research and write it up properly and have it published, so that everybody can have it available to them.

[0:48:56] Verdenius: Would you nevertheless describe yourself as a discoverer?

Adie: Well no, I describe myself as a scientist. I've been in this business for science, and it's only been incidental, in other words getting at the scientific side that one has done these other things. You see it's a different, you see there are people who call themselves explorers who go to a place without any scientific knowledge, all they want to do is to go and climb in the Himalayas, or go and from A to B, because they can then maybe nobody's been there before they can then say 'Well, I've been from A to B', but unless all of this work is written down properly, and is available for people coming on later, what point is there going from A to B? There's no point – when you come to think of the amount of money that is spent putting expeditions in the Antarctic, and the actual return in terms of scientific knowledge it's, I mean probably a lot of that money has just been wasted, but my own view and I know the view of several of my colleagues is that one really wants to get the greatest return for the least amount of money, the greatest scientific return for the least amount of money, and not just be an explorer.

[0:51:12] Verdenius: How would you describe the Trans-Antarctic expedition?

Adie: Well the Trans-Antarctic expedition was a very special expedition. The way it originated was, in fact it was thought up when Sir Vivian Fuchs and I were sledging down here. We actually, when we had to lie up because of blizzards we talked about this possibility, and the Trans-Antarctic expedition was very, very well organised. It was not just going from one place to another, it was setting up a base camp from which scientific work was done. You see they did have aircraft as well, but the scientific programme was very well thought out, and then the exploration side was in fact across Antarctica from one side to the other, via the South Pole. And so a great deal of very good scientific work came out of the Trans-Antarctic expedition, but there was another very important component of it, and that is that the people who were involved in that expedition were from different parts of the British Commonwealth – there were people from England, well U.K., there were people from South Africa, Australia, New Zealand, do you see? So all these, and actually the proper name for the Trans-Antarctic expedition was the Commonwealth Trans-Antarctic expedition. So it was people from different parts of the Commonwealth, the thing that they had in common was the fact that they spoke English, but also the fact that each of them was able to make a contribution towards the science, but each of them also was able to make a contribution towards the actual journey across the continent. So I think it was a fantastic expedition.

[0:53:59] Verdenius: Did the idea evolve somewhere on the South Shelf?

Adie: Well the idea evolved here, was started here, it was conceived here, and then operated somewhere else. But it was very carefully planned, it was planned over quite a number of years.

[0:54:27] Verdenius: So how did it evolve did it just pop up in a conversation?

Adie: Well, it, how it came up in the beginning was that Sir Ernest Shackleton who had been on the first Scott expedition, 1901 to '3, and had also led his own expedition down here in an attempt to get to the South Pole in 1907 to 1909, had planned an expedition literally to cross Antarctica. But the problem was that their ship, the *Endurance*, was caught in the Weddell Sea and it was wrecked, and that finished the expedition, and what was in mind for the Trans-Antarctic expedition was to achieve this crossing of Antarctica, so that's the background to it. [long pause] That's a very, and all these different things fit together in different ways. But I think the most important aspect of all of this to me has been the research side, the academic side, and of course having a, well first of all as I said earlier, I was in Birmingham for quite a number of years and we were actually in the geology department at Birmingham University, which meant that the people who were to go down here to the Antarctic were first of all they were trained people, who were then given further training to adapt them to the Antarctic, they were given specific programmes of work to do, and then when they came back from the Antarctic they were able to work up, or continue their research in a university department, like a geology department, and then they were able to get out of it a higher degree, a doctorate or a Master's degree, and also publications, and it was one of my jobs of course to supervise those people in an academic sphere as well, so that is and teach them how to write papers and supervise their research. So this has been another aspect of the work that we have done here. To plan a properly co-ordinated programme of research, to get the right people to

be involved in it, and to make sure that they get something out of it in terms of publications, and a higher degree and all of those people today, all those many research students that I've had in the past, have all got very good jobs, and I think this is very important. Now if those people had gone to the Antarctic just as explorers, they wouldn't have got any of that out of it. They would have perhaps got the excitement of driving a dog team, but what good does that do you for a career?

[0:58:48] Verdenius: Not so much probably. When you were on the Shelf or when you were on expedition in the Antarctic there will probably have been days when you couldn't get further because the weather conditions didn't allow you to, so called lie up days?

Adie: Yes. Well there were lots of occasions when a blizzard went on for ten or twelve days, and the only, you couldn't move your tent because you would be blown away, you couldn't travel, you literally had to sit in your tent and with one other person, and you had to do your cooking; the only time you went out was once a day to feed the dogs, and that was it. You had to literally live in seven feet by seven feet, and then what did you do? There was always lots to do to write what thoughts were going through your mind. You were always catching up on work that you hadn't been able to do because when the weather is good you work, work, work, work with minimum amount of sleep and writing up and so on. Now for instance, in one of the second trip that we had here in George VI Sound we had six weeks of absolutely perfect weather, we didn't have any lie-up days at all, but of course because we were working here in the summer time we actually had to do our travelling at night, because the ice surface was too soft to travel in the daytime, so we completely switched over to sleeping in the daytime, and doing a certain amount of geology and so on in the daytime, sleeping, writing up as much as we could and then travelling at night. So you have to do these sort of things, and so if you have a long period of good weather you just keep travelling and working; and then on the other hand you may get a situation where you could be in autumn for instance, you could have three or four days of blizzards or twelve days, I think the longest was twelve days that I experienced. But the weather is bad, and you just have to take advantage of the good days, travel as much as you can.

[1:02:13] Verdenius: Well as a man of science of course you don't want to waste your time at such a moment. How did you cope, could you find a solution for that, for being in places for 12 days? Did you make something of your time?

Adie: Oh, yes, there's lots and lots of things to do. For instance, writing. Well of course we read a bit because we had books with us, but writing and ideas that were coming into your head and so on, a lot of that sort of work was written up during that time.

[1:02:56] Verdenius: Which books did you take along?

Adie: Well I had several travel books, well we each had books, but mostly actual travel books were the ones that I took, for instance one of them I remember very well was an extremely good book – can't remember the title of it at the moment but it was a book on the early travel in Tibet which was fascinating. But these are the sort of books that you can re-read, you can put them down then re-read them a month later; and they're worth re-reading most of those

books. But I think one of the things, the most important thing is adapting to a situation where perhaps there are only two of you living in a very confined space, and the relationship between you, and I think this is a very, very important thing.

[1:04:14] Verdenius: Your companion was ten years older...

Adie: Yes, well more than ten years older, and he had – this is Sir Vivian Fuchs – he had in the, well he'd been up in Greenland in 1928/29, he had before the war, he had taken three major expeditions to East Africa, in Northern Kenya and into the southern part of Ethiopia working in the rift valleys and so on and so forth, and he had that experience so he had a lot to tell me. But having the same basic interest, the geological interest, it meant that we got on very, very well together, and so in all those, well I mean I've camped with him for more than two years, and all that time we never had a single argument. I mean, discussion which is one thing, but an argument about principles and so on is a completely different thing, we never fell out. I mean he lives in Cambridge and I see him often, so - you see actually his birthday is on the 11th of February, which is just in a week's time. So, but it's very, very important in this sort of work, today it doesn't matter very much because there are so many people floating about, and only go somewhere for a short time; they don't work together for a hundred days. I mean to just for two people to be together with nobody else in sight, the nearest people perhaps 3 or 400 miles away, but just for two people to be able to work together and still be on speaking terms, what, 40 years afterwards is something, it's incredible, and it's really sort of looking at the characters of people, 'cos if you put the two wrong people together in one tent, to camp, the next thing is somebody has killed somebody else. This has happened in the Antarctic, that people have not got on well with each other, so it is important to look at the personalities of people as well, and to make sure that they have the same objectives as you have, from the scientific point of view. After all, all of this work that has been going on in the Antarctic since goodness knows when, has all ultimately been directed at science.

[1:08:04] Verdenius: How did it come along that you two went together on expeditions?

Adie: Well, I'd already been here you see, for a year at Hope Bay, and then at the beginning of 1948 when he came, he came in with the new group of people, because people come and go, they perhaps stay for a year or two years and then they go back home and then another lot of people come in, and it just happened that he came in with some new surveyors and new radio operators and so on and so forth so I don't know, it just, that's how it happened.

[1:08:57] Verdenius: There was nobody who was saying 'You two, you go on expedition'?

Adie: No, no, no. No, it just happened that he came down with a group of people. Now you see this, what we are talking about here with the, say, the British Antarctic Survey; this is an on-going thing, that people go down, work for a certain time, come back and they then are replaced by another lot of people who go for another one or two years, and it's on-going, but in some of these other expeditions that have taken place in the Antarctic, now the Commonwealth Trans-Antarctic Expedition for instance was there from 1955 to 1958, they did their piece of work, finished. That was just one exercise, but virtually all of the national

expeditions to the Antarctic today are on-going. They have scientific programmes that are properly co-ordinated, and this is what the international science bit is about, and that is that for instance it's ridiculous for say Argentines or Chileans in say the Antarctic Peninsula to be doing the same work as say the British, but let the Argentines do one piece of work, or the Russians or the Poles let them do a certain piece of work and let the others do other pieces of work so that you can put all the work together in the end. It's a waste of time for two people together, well, doing the same piece of work. I mean researchers in ordinary life in civilisation, researchers don't undertake a piece of work that somebody else has already done, or they know that somebody else is already working on. It's a waste of time.

[1:11:34] Verdenius: I just was wondering how does the decision come along to actually go out there, to travel that piece of land? Somebody, somewhere must be the first to say 'Let's go there' but is it the people who actually go there or is it somebody else?

Adie: No. The scientific in all of this international science whether it be the U.K., or the Russians or the Argentines, or the Chileans, or the Australians, or New Zealanders they all have their national scientific programmes, and these scientific programmes are properly co-ordinated, so they're not for just one year, usually the scientific programmes are for five years, so if one doesn't achieve the whole of the programme in the first year it carries over to the second year, carry it over to the third year and this is the order in which we will do such and such, and these are the people who we will need to do this programme, and so those people are recruited to do that programme. The decisions today, the decisions are not taken down here in the Antarctic, as to what scientific work will go on, those decisions are taken in Europe, or in South America.

[1:13:19] Verdenius: Not even in 1948?

Adie: In 1947, '48, '49 the, for instance the mapping of the east coast of the Antarctic Peninsula, that was a decision that was taken here, and that was the object of the exercise to do that specific piece of work from there to there, and then from there to there, and that was a decision that was taken here. In 1948 and 1949 the basic decisions were taken here, but these were in fact the detail of the planning was done here, in the Antarctic, not in the U.K., and so this is how things have changed. But today, with all of these programmes, it doesn't matter what country is carrying out the programme, the basic plan is worked out, say for instance in England by the British Antarctic Survey, in Poland by their national expedition group, in Argentina by theirs, by the Australians by the Australian National Antarctic Expedition, and then those programmes are implemented.

[1:15:02] Verdenius: At that time were the details which were filled in by the local people were they very important so as to . . . ?

Adie: The important thing on the ground was in fact to carry out, or carry through the logistics of how to achieve the objective, in other words you had to work out on the ground exactly how much food you, food, man-food and dog-food you need, how much fuel, all what equipment you would need, what routes you would take, that was all done on the ground by the local person, but the basic plan of working in a particular area and trying to achieve a

particular objective was worked out say here, in the U.K. Today it's even more so, that every single thing is worked out here and the people just go there and literally implement it, they're more or less told how to do the job, and this is very important especially if there is a particular say scientific site like that that needs very detailed investigation. So it means quite a different setup.

[1:17:19] Verdenius: If you have a certain objective like for instance mapping the east coast of the Antarctic that is very concrete of course.

Adie: It's absolutely concrete.

[1:17:40] Verdenius: But I can imagine that some scientific objectives can become pretty abstract especially when you are keen to investigate.

Adie: Well quite a lot of those things depend on well the initiative of the researcher, if he sees something that is very unusual, then he can go and investigate. Then it also depends on how well trained a person is. If a person has very little experience there's certain things that he may observe, there are lots of things which he may overlook completely because his eye isn't trained to observing those things. I mean you can look at the problem like this, that if you, say for instance in a geological context, you go to a certain area and you map it, then 20 years later you, who mapped it originally, go back again, you will see it in a completely different way, for the simple reason that you've got 20 years' experience.

[1:19:49] Verdenius: Bring in one more topic for a moment by the way I'm curious, did you take cigarettes along in the Antarctic?

Adie: Yes. We had more cigarettes than food.

[1:20:05] Verdenius: Yeah? [ Adie chuckles]. You both smoked. That's not ... I wanted to ask you about the other nationalities which were on the Antarctic, because you've been on the American base, and you mentioned the Argentines and Chileans and you may have probably some insight in the ways that they approached the continent.

Adie: Well, well I think the approach of the U.K. is that there is a certain amount of money available for this research because this whole research programme in the Antarctic is a government sponsored programme. There is a certain amount of money and each year that money can be spent on capital equipment, various advanced forms of technology and paying for certain research programmes. The money is very, very carefully controlled to produce the best out of the least amount of money. The attitude of the Americans, and their programmes are controlled by the National Science Foundation, is rather different. What they have tended to do is to allow people at universities and various scientific organisations to put forward proposals to them for certain programmes of work; saying 'This is the objective, and this is the logistic setup, this is how much money we need to do the field work, to do the writing up', and then all of these programmes are considered by committees and so on, and then eventually the money is awarded to different people, and then the logistics in the field is more or less co-ordinated, who is going to have helicopters when, who is going to have the larger aircraft for various things like radio echo sounding, how are people going to get from A to B

to C, what flying programmes there are and so on, and then the big American base which is, bases, the one at McMurdo and the one at the South Pole, these are provided with food and fuel and so on from the central organisation and the scientists use that basic setup to achieve their own programmes.

[1:23:46] Adie: Then that's quite a different system from the system that is used in England, the Russians operate more or less as a central organisation and they consider various programmes of work, and they pay for that work to be done in a special order. The Australians operate in the same sort of way but they do in fact consider research programmes from say universities, and these people would be taken along as well to do their own bits of research, and they would receive money for paying for various things from that. The New Zealanders work the same way. The Chileans for example have a central body which receives government money, they have logistics provided by the Chilean navy, they do take account of various research programmes put up by universities, and the Argentines operate in more or less the same way as the Chileans. But then you've got all sorts of other people involved, for instance people like the Czechs used to go to the Antarctic with the Russians. The French, their main interest is, they have one base at Dumont d'Urville on the Antarctic continent, but they have special interests in some of the off-lying islands, like Kerguelen, the Crozet Islands, and so on, but their's is more or less a central organisation. The Belgians had a programme but that is rather gone to one side because they're short of money. Germany has a programme in the Antarctic which is centralised on the Wegener Institute for Polar Research in Bremerhaven.

[1:26:27] Adie: Who else? The people like the Poles who have a national programme, then the South Africans they have a programme, and so on, there are about 37 countries now that are interested in working in the Antarctic, and they all operate in slightly different ways. Some are, well I think basically all of the money to operate these programmes comes from a central source, and that is the government. There are virtually no private expeditions, except for say mountaineering or something like that; money is very difficult to come by, so all of the really good programmes, and the programmes that have been thought through very carefully, are ones that are government sponsored, and therefore they are controlled very, very carefully by government committees and sub-committees, and of course here in England all of this is vested in the British Antarctic Survey. But still they have advisory committees to tell them 'You should be doing this sort of research or that sort of research', or 'How is this connected to, this programme connected to that programme?' But a lot of people do go privately to the Antarctic if they've got plenty of money, but most of these are people who just want to go and climb in the Antarctic, climb mountains.

[1:28:17] Verdenius: Or just to be there.

Adie: Or just to be there, just go there, I mean for instance if you look at any the tourist ships that go to the Antarctic, the people there on those tourist ships are mostly people who haven't any real scientific interest, they like to go and see the birds, or the seals or something like that, but they're mostly people who have a lot of their own private money, and who have been almost everywhere else. They've travelled Europe and North America and South

America and Asia and so on, Australia and New Zealand, and they just want to go to just another place.

[1:29:05] Verdenius: Does that make sense to you those things like - what's the Englishman Fiennes who is traversing the Plateau with man-haul sledge?

Adie: Yes, well he is now only 50 miles from the end of his journey, this is according to the radio this morning, and also according to the newspaper. Well, I know him quite well, and I think it's just, it's difficult for me to say that I don't agree with what his objectives are, but of course with all these expeditions one would like to see a bit more science, I mean what he's trying to do is just walk across the continent from one side to the other, unsupported, and this is just, if he completes it will it just be another record for the *Guinness Book of Records*? I mean for two people doing that sort of thing, I don't think they can achieve a lot of science. You see I believe myself that if it's going to cost a lot of money to take somebody to the Antarctic, because it's a remote place, I know you can fly there and so on, but if it's going to cost a lot of money to go there then you have got to show something in return, in other words if you can say 'I have achieved this', or 'I have completed this piece of research, and I have published that', and so on.

[1:31:19] Verdenius: Which research do you think has great value at the moment? Which main thrust forward is going to be made in research in Antarctica at the moment?

Adie: Well, this is very difficult to say because if you talk to somebody who is in the atmospheric sciences they would tell you straight off that atmospheric science is; if you talk to somebody in the Earth sciences they'll tell you that the Earth sciences are very important; if you talk to a marine biologist he'll tell you that marine biology is very important, the conservation of whales and the conservation of seals and the marine eco-system, and all these sorts of things.

[1:32:15] Verdenius: But I assume that after 40 years you have an overall grasp of the situation.

Adie: Well, I've thought about this quite a lot of times, but it's very difficult to, if you understand about, say, the marine eco-system it's very difficult to say that the work in the marine eco-system is much more important than say, for instance, looking for mineral resources in Antarctica. I mean for instance, one of the things that we know at the moment is that the world's largest coal field is in Antarctica, but, who is going to go to Antarctica to mine coal because it's beneath all that snow and ice - it's there, but who is going to go and do that? Alright, go to something else, offshore hydro-carbons, natural gas and oil, we know that there are great reserves of natural gas and oil offshore of Antarctica, but it's really out of the question and completely un-economic to go to the Antarctic to tap these resources if already in far less hazardous climates there are still reserves. There'll be reserves in several thousand years' time, and they'll still be in the Antarctic. I can't imagine anybody going to the Antarctic to, say, mine coal, or take offshore hydro-carbons, or for instance I mean we know several iron ore reserves in the Antarctic, who is going to take those away?

[1:34:55] Verdenius: This was some fear about reconfirmation of the Antarctic Treaty?

Adie: Well this is true, there is a sort of convention on mineral resources now, in the same way as there's one on marine life and conservation of seals and whales and all these things are rolled into one. But who really is to say which is much more valuable, whether it's more important to do research into the ozone in the upper atmosphere, because there's this hole in the ozone layer, is it more important to do research into that than to do research into marine living resources? It's very, very difficult, and this is where the very big problem has come in carving up the sum of money that you have available for research, to give each group of people a proportion of that in relation to the programmes that they've put forward. That is, it's a very, very difficult problem to answer, and so really the thing is that when one is in a management position in a national Antarctic expedition one has to take very careful advice from all sorts of specialists, and then try to put them in a priority order, that this particular kind of programme should have more money than this one, or this should have less than that one – it's a very difficult situation. But also of course one of the important things is having programmes available, but also having the properly trained people to conduct those programmes, because if you haven't got the properly trained scientists to complete a programme you might be wasting your money totally. You've got to have people who are leading these various teams of individuals as well. So it's really quite important.

[1:37:56] Verdenius: Scott said by the way that, Scott describes Antarctica as a awful place, does that make sense to you considering ....?

Adie: Well yes, it does, it makes a lot of sense because the environment, the climate in the Antarctic, is so totally different from what we're used to, say in Europe or other parts of the world. The only comparable place to the Antarctic is in the Arctic, and, the Antarctic is just a horrible place if the weather's bad and the temperatures are low and you're up against all of the elements. But with all the advances today certain parts of the Antarctica are not horrible at all, they're quite comfortable. In fact in some places, I mean for instance at the South Pole you can be a scientist there on a particular research programme and you don't even have to go outside.

[1:39:31] Verdenius: But at that time did you find beauty there?

Adie: Oh yes it's fantastic, I think one of the most fantastic things about the early days, when I was there, was in order to do my scientific work, here I was seeing wonderful mountain ranges and glaciers and rock outcrops and so on that nobody had ever seen before, and here, one was taking photographs of these things. So I think it's a fantastic place, and you could imagine if you'd just as I've done many times in those early days just being by myself up on a cliff face, and the other person who was with me being ten miles over there, and it was, if anything had happened, had gone wrong, I would have disappeared without trace. It's incredible isn't it? But it's a fantastic place, but today one sees all these things in a different light because you would just merely rush in, do a particular job and go away again; you don't get to grips with nature, which is really what we were able to do.

[1:41:24] Verdenius: Get to grips.

Adie: Well to be in direct contact with nature.

[1:41:32] Verdenius: And alone.

Adie: And alone, or just two of you, with nobody else within three or four hundred miles. It's a completely different situation, from today.

Interesting clips:

- 'How did you get involved with Antarctica?' [0:01:55]
- First experience of snow. [0:05:41]
- Situation in the South Atlantic during WW2 and Operation Tabarin. [0:07:29]
- Total equipment for sledging trip. [0:36:54]
- Commonwealth Trans-Antarctic expedition. [0:51:12]
- Contrasts in weather conditions. [0:58:48]
- 'Your companion (Fuchs) was 10 years older'. [1:04:14]
- First meeting with Fuchs. [1:08:04]
- How different countries contribute to research in Antarctica. [1:20:05]
- Antarctic mineral resources. [1:32:15]