CHEMICAL HERITAGE FOUNDATION

THOMAS M. AITCHISON and JEAN AITCHISON

Transcript of Interviews
Conducted by

W. Boyd Rayward

at

Letchworth Garden City, Hertsfordshire, U.K.

on

4 July 2000

(With Subsequent Corrections and Additions)

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Jean Aitchison

(Date) 6 February 2004

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Chemical Heritage Foundation
Oral History Program
315 Chestnut Street
Philadelphia, Pennsylvania 19106

THOMAS M. AITCHISON

1923 Born in Glasgow, Scotland on 31 July

Education

1944 B.Sc., math and physics, University of St. Andrews, Scotland
1955 Associate of the Library Association, U.K.

Professional Experience

Courtaulds, Ltd., Braintree, Essex, U.K.
1948-1955 Librarian

British Aircraft Corporation, Luton and Stevenage, U.K.
1955-1964 Divisional Librarian and Information Officer

National Electronics Research Council, London, U.K.
1964-1966 Technical Officer and Director, SDI Project

Institution of Electrical Engineers, London, U.K.
INSPEC
1967-1988 Deputy Director, then Director

Peter Petergrinus, Ltd.
1980-1988 Director

J&TM Aitchison, Information Consultants, Letchworth, U.K.
1988-1990 Partner

Honors

1986 O.B.E. [Order of the British Empire]
1987 Hon. Fellow, Institute of Information Scientists
1988 Hon. Fellow, National Federation of Abstracting and Indexing Services

JEAN AITCHISON

1925 Born in Huddersfield, Great Britain on 6 October

Education

B.A. in honors history, London University

Professional Experience

	Ministry of Town and Country Planning Library
1948-1949	Assistant Librarian
	Derbyshire County Library, Matlock Branch
1949-1950	Deputy Librarian
	Sheffield Public Libraries, Science, Commerce, and Technology Library
1950-1951	Sub-librarian
	Kingston-Upon-Hull Public Libraries, Commercial and Technology Library
1952-1954	Librarian
	English Electric Co. Ltd, Whetstone/Rugby Library, Leicester
1955-1964	Chief Librarian
1961-present	Consultant
	From 1988 to 1998 operated under the name J & TM Aitchison

Honors

1982 Ranganathan Award for work on Thesaurus Design

ABSTRACT

Thomas M. Aitchison begins his interview by detailing his educational background and then continues by discussing how he first became interested in the field of information science. With the start of his career at Courtaulds, Aitchison got his first taste of working in a library. However, it was with the completion of the Library Association correspondence course that Aitchison gained the confidence and knowledge necessary to become a successful librarian. After applying and being hired for a divisional librarian and information officer with the British Aircraft Corporation, Aitchison became a member of the Aslib aircraft information group. He also joined the National Electronics Research Council and helped the Council develop a journal and numerous other projects. In January 1967, Aitchison helped form the Information Service in Physics, Electrotechnology, and Control [INSPEC] and became the information research manager. He also worked to mechanize *Science Abstracts* and organize the Direct Evaluation of Indexing Languages [DEVIL] project. He concludes his interview by sharing recollections of those who had the most influence on his career.

Jean Aitchison begins her interview by discussing how she first became involved in thesaurus development. She continues by sharing her first meeting with Shiyali Ramamrita Ranganathan and her initial impressions of him. Aitchison worked to complete three editions of *English Electric Faceted Subject Classification for Engineering*, between 1958 and 1961. With the help of others, she developed and reclassified many projects. She worked with Cyril Cleverdon on several publications and in March 1967 she began work on Thesaurofacet. She also worked to develop and improve the Bliss Association Classification system.

INTERVIEWER

W. Boyd Rayward is a research professor in the Graduate School of Library and Information Science at the University of Illinois, Urbana-Chamapaign. He turned to librarianship after graduating in English literature from the University of Sydney. He received his Ph.D. from the Graduate Library School at the University of Chicago in 1973. He has held positions in the University of Chicago (where he became Dean of the Graduate Library School). He served as Professor and Head of the School of Information Library and Archive Studies and Dean of the University's Faculty of Professional Studies at the University of New South Wales in Sydney where he is now professor emeritus. He has published two books related to Paul Otlet, Belgian documentalist and internationalist, and a great many articles on history of national and international schemes for the organization and dissemination of information.

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INTERVIEWER: W. Boyd Rayward

LOCATION: Letchworth Garden City, Hertsfordshire, U.K.

DATE: 4 July 2000

RAYWARD: Tom, let's begin with a discussion of your childhood and early education.

T. AITCHISON: Alright. I was born in Glasgow, Scotland, in 1923. When I was three, my family moved to Dundee, where I attended school. When I was older, I went to the [University of] St. Andrews, where, in 1944, I earned a B.Sc. in physics and mathematics. Then, I joined the Army for a short time during World War II, and was discharged to work at the Admiralty Signal and Radar Establishment in Haslemere, England. I'd had some extra radar training, and I did radar research there for three years. Then, in 1948, I became a librarian for Courtaulds Limited, in Braintree, Essex.

RAYWARD: How did you get involved in libraries with a background in mathematics and physics?

T. AITCHISON: I wanted a degree in either Classics or English, but I was given a large bursary during the War—or what I thought was a large bursary—to study physics instead. I hadn't studied physics or chemistry for some years, but I'd taken a lot of extra math courses because they fit in nicely with the Greek I was studying, and so that was why I got the bursary.

I found myself doing physics at University and having to catch up with people who had been doing it for six years. In the end, it worked out alright, but I realized that I didn't want to be a physicist; I didn't want to work in the laboratory. My study of physics was more of an intellectual exercise than a desired course of study. That was when I saw the job for Courtaulds.

RAYWARD: Please describe your involvement with Courtaulds.

T. AITCHISON: Courtaulds had advertised for an indexer in their library, which seemed like a good position for me because I used libraries frequently; although, I didn't know much about them at the time. After having been hired, I soon found my job was more like a librarian's than

an indexer's because the library didn't have anyone else. I was basically a one man band, though I had some help from an assistant.

I had to learn about libraries very quickly; how to work my way around, do the indexing, the classification, and all the rest, as best as I could. I started taking the Library Association correspondence course. Then I took the examinations. I found that I had been doing well in the library so far, but there were still things that the Library Association could teach me, so I continued there until 1955. Afterwards, I felt that I could answer any question asked of me with ease.

RAYWARD: Did you provide any information services at the library?

T. AITCHISON: Yes. I was provided a full information service, in the sense that people were asking questions and I was answering them. I also had a decent knowledge of the textile-research field by that time, so I was editing a lot—textile researchers produced a lot of reports and a fair number of papers, which I edited. I enjoyed working at the library because it was a textile research laboratory with a small clientele.

Around that time, I noticed a job opening with the British Aircraft Corporation [BAC], for which I applied and was hired. The position had something to do with guided missiles. The BAC had been in Luton, until a new plant was built in Stevenage and we were all moved there. I was a divisional librarian and information officer, as it was then called. My staff and I did a considerable amount of straightforward librarianship with increasing amounts of information work, especially when the work advanced from the guided weapons to satellites.

RAYWARD: What do you mean when you say "information work?" What were you doing that was different from the typical library work?

T. AITCHISON: For instance, people asked what kind of information was available in a particular field, and we searched the particular subject fields for them. Frequently, those people would look to their co-workers as well for the same information, and we would rush to get them the information before they could get it elsewhere.

RAYWARD: Did you provide them with bibliographic references or with actual answers to their questions, *in extenso*?

T. AITCHISON: Very rarely did we provide real answers to questions because that was risky. On occasion, we could pinpoint information and say to the researcher, "This paragraph in this paper should answer your question."

During that time, I became involved with the Aslib [Association for Information Management] aircraft information group, in which Cyril Cleverdon was involved. Cyril and I developed a friendship through that work, as did my wife and he. I eventually became secretary of the group and got more involved with Aslib.

At the same time, I chaired an Aslib conference session when a fellow from IBM [International Business Machines Corporation] gave a lecture about Selective Dissemination of Information [SDI]. As far as I know, IBM coined SDI. I found SDI extremely attractive. It seemed like a wonderful idea, and I went back to Courtaulds thinking I'd try to put it into my library. The only problem was that I didn't have access to any computers. They were being used extensively on the site, but for missile guidance and things of that nature, not in the library. Anyway, I liked the idea of SDI, especially the idea of the feedback on forms—as opposed to odd remarks made in the library—so I setup a manual SDI system, sending forms out to people in the same way that people would've used a computer program.

That system was greeted with great enthusiasm. Of course, I had a great advantage because the system was available to only a small number of people initially, all of whom I knew, so I could tailor it to exactly what they wanted. For instance, I remember when I sent the electronics group's director a paper on the ABC's of electronics. It looked as though it should be the last thing I should send him, but I knew he was meeting with a women's group to discuss general electronics, so it was actually the perfect document.

RAYWARD: You must have had access to photocopying equipment.

T. AITCHISON: Yes. We did a lot of photocopying. I did a lot of that work. Then I was head-hunted from there. The director of engineering, L. H. Bedford—a famous engineer in this country—was on the committee that established the National Electronics Research Council [NERC], under the chairmanship of Lord [Louis Francis] Mountbatten. Bedford was asked if he know anyone who could do a technical job with an information interest. He thought of me and put my name forward. It was a glowing report, which surprised me considerably because the only time I'd ever had dealings with him was when he kept swearing at me. He used to use *Electrical Engineering Abstracts* extensively, and he never got used to the idea that the numbers in the index corresponded to the abstracts themselves and not to the pages. He was regularly unable to find what he needed in the *Abstracts*, and he would throw them at me in anger in the library. That had been my impression of his view of me, but he had a different view, obviously.

Anyway, I joined the National Electronics Research Council when it was just starting up. There I was, as its only staff member, attached to the British Institution of Radio Engineers [Brit IRE]. I was there for two years, during which time I developed a number of things, like a journal, and I urged the Council to do something about information. They were very concerned with research in this country, and they hoped, ideally, to coordinate it, and so on.

RAYWARD: Did they have funds for such projects?

T. AITCHISON: Not at that stage. Their work was based entirely on the knowledge that Lord Mountbatten was the Queen's [Elizabeth II] uncle; actually, he was Prince Philip's [Mountbatten] uncle. Lord Mountbatten was able to get together all the chairmen of all the electronics companies, all the government department heads, all the university department heads, and all the government research laboratory directors. Our list of Council names was wonderful because it was full of Sirs and Lords, and so forth.

We setup an information committee to consider how we could help research workers. I mentioned the SDI concept, which they thought was a great idea. It happened that one of the people on our research committee was a member of OSTI, the Office for Scientific and Technical Information. Over lunch one day, I said we ought to do something about SDI, and he said, "Why don't we set up a research project?"

That was in the very early days of research grants. Cyril got money from America through the NSF [National Science Foundation], but such funding was very uncommon back then. And so, when I left that lunch, I remember being very excited about SDI's potential. I wrote a proposal, and after it had been reviewed and dealt with, we got the money to work on it. We recruited an assistant for me and some other members of staff to do the clerical work, and so on.

When the project was completed, we had showed that it was feasible to carry out a proper, large-scale research project. We'd got as far as designing it but we hadn't got funding for the research project. At that time, there were difficult interactions with the IEE [The Institute of Electrical Engineers] *Science Abstracts*. Brit IRE was opposed to the IEE; at least, they were different groups going to the same well, and you obviously have problems with that.

RAYWARD: Would you elaborate more? Because the IEE had *Science Abstracts*. Then you were part of the NERC.

AITCHISON: Yes. And NERC was associated very closely with the British IRE.

RAYWARD: Was the IEE on the Research Council?

AITCHISON: As far as I remember, the IEE wasn't a member. There were connections because the people in Brit IRE and a lot of the other members of the Council were members of the IEE Council.

RAYWARD: Let's return to your project.

AITCHISON: We had decided to produce current papers in electronics research, which clashed greatly with what the IEE had proposed, and it created a great deal of acrimony between those two groups. I think Lord Mountbatten and some other people didn't want the hassle, and there seemed some doubt as to whether NERC would get any money from the government to undertake its grandiose schemes. Consequently, Lord Mountbatten was persuaded to merge NERC's work with the IEE *Science Abstracts*. So my deputy and I, the only two staff members of NERC, were passed to the IEE. No one asked us if we wanted to do it—it just happened.

I'd been very much connected with OSTI in the development of the SDI experiment. They were in the process of funding the IEE to mechanize *Science Abstracts*, but we had comparatively little faith in how they would go about it. OSTI felt the IEE was dragging its feet. *Science Abstracts*, to a large extent, had been pushed into mechanization by the Americans, AIP [American Institute of Physics], and the American Physical Society. OSTI arranged for the Institution's secretary and the deputy secretary, J. R. Smith—who, as it turned out, eventually became the first director of INSPEC [Information Service in Physics, Electrotechnology and Control]—to observe various processes in America, including the people doing typesetting at MIT [Massachusetts Institute of Technology]. They also arranged for me to travel with them, as they wanted somebody to make sure they did the right things.

RAYWARD: Was that soon after you'd been transferred?

T. AITCHISON: No, that was before I was transferred. I was going there as their spy—whatever—but I was transferred before we set off on our journey. So I found myself negotiating where I fit into the IEE with the secretary in a New York taxi! I can assure you, that's not a great way to negotiate. You don't have many things in your favor under those circumstances. Anyway, I was taken on by the IEE to do information research.

RAYWARD: Tom, just to clarify. When you were taken on, you brought the SDI research project with you, correct?

T. AITCHISON: Yes.

RAYWARD: So, in a sense, you would have had that money and that project as—

T. AITCHISON: No, we didn't have the project, yet, because it hadn't been approved. Everybody said they liked it, but there was still the question of who would pay for it. Everything was still up in the air.

The US trip made us confident that phototypesetting was possible, which was the great thing that came out of the visit; we could see it working. And we had discussions with people at MIT. There was some question as to whether we would go down their road and engage them, but, in fact, we ended up doing it ourselves. It was confidence-building, certainly, because the INSPEC project was hinged on our ability to persuade people that such things were possible. Of course, the great danger of having persuaded people was that they then thought things should be much easier than they actually were.

Anyway, we came back and formed INSPEC in January 1967. I became the information research manager, David Martin became the information systems manager, and we both worked under the directorship of J.R. Smith. David was concerned with designing and developing the new system.

RAYWARD: So INSPEC was, essentially, a mechanized version of *Science Abstracts.*

T. AITCHISON: That's right. In the meantime, of course, we were developing a system at INSPEC. As for *Science Abstracts,* they were a separate group of people who continued to work using the manual system.

David developed the INSPEC system in a very short period of time, and then we tried it out. For a time, we ran a mechanized system and a manual system in parallel, and then the manual system was dropped in favor of the mechanized version.

It is important to note that when David Martin was designing the system, he was very, very careful to make sure that it did all the things that a database does properly. He insisted that all the input be designed to be published easily in abstract journals. He wanted to provide mechanized services, and eventually provide online services. He had a vision of people sitting at the terminal and getting information from the database. That was quite exceptional because a number of other people mechanized only in order to mechanize their publications. That was true in America; certainly in *Chemical Abstracts,* and so on. So we had a totally mechanized database very early.

RAYWARD: Had *Chemical Abstracts* and other similar services began mechanizing their data before you?

AITCHISON: *Chemical Abstracts* had mechanized their chemical papers, I believe. MEDLARS [Medical Literature Analysis and Retrieval System] and NASA [National

Aeronautics and Space Administration] were the first to mechanize. While I was at NERC, Lord Mountbatten was to give a presentation in Canada to the National Research Council, and I was to help him answer questions. On my way to Canada, I took a trip to the United States and saw all the good things—mostly good things—that were happening in America.

RAYWARD: What was it like working with Lord Mountbatten?

T. AITCHISON: Fascinating. It was hard work. While he was at NERC, he produced a paper on SDI. He gave a lecture on SDI to the Royal Institution in London—I wrote it—and then he gave the same lecture to the National Research Council of Canada. The one in the Royal Institution was one of their Friday-night lectures. The lecture had to last for an hour, it couldn't have an introduction, and no questions were allowed afterwards; and the entire audience sat in dinner jackets! [laughter]

RAYWARD: How did INSPEC's board feel about the system you were creating?

T. AITCHISON: David learned that INSPEC's board was unsure how the system would work, so he produced a twelve-page sample and showed them that it worked. Upon seeing it, the board said, "Very good. Now, you've got this deadline to do the three current papers at the same time." So the board nearly managed to scupper the whole project because it became a very close-run thing, whether we could manage it. And we went through a period when we were putting stuff in, but it wasn't very clear where it was going because nothing seemed to be coming out of the system at the end. Anyway, that worked out successfully.

RAYWARD: When did that begin?

T. AITCHISON: We began mechanizing *Science Abstracts* on 1 January 1969. One of the interesting things was that we had to include the indexing for it. We had already produced the six monthly indexes for the abstract journals, and so on, but we had to figure out how to create the indexes for online searching.

That was when we started the DEVIL [Direct Evaluation of Indexing Languages] project. We looked at the title, the abstract, the controlled language, the free-indexing, and the indexing that they were already using for *Science Abstracts*. That was very much my baby at the time, and I relied heavily on Cyril Cleverdon's work at Cranfield to design the evaluation. At one stage, I think I knew more about Cranfield than anybody—except, perhaps, Cyril himself. I found a whole host of problems, which, obviously, he had had in the tests. I came out with results that were slightly different from his.

The controlled language, it seemed, gave the best balance between recall and precision than anything else, but the next best was the free indexing. A group of four people created the control language we had been using by working together very closely, which helped them maintain a firm control of the language. I don't see how you could control a language created by thirty information scientists. It would be much more expensive, too.

RAYWARD: Were those four people working from a thesaurus?

AITCHISON: Yes. They had lists and a thesaurus of sorts. So I put forward the idea that we ought to go for the free indexing because it has a number of advantages. It is easier to do, it's quicker, and it uses the words that were used by the scientists rather than some proxy of them. Also, a user could put his search in his own words when using SDI. So we settled on that.

In retrospect, I'm surprised just how quickly we did it. The tests went on forever because it was fairly large—or so it seemed to me. But once we decided, the free-indexing was incorporated into the INSPEC production very quickly and without serious problems. Everybody liked it, which was a great thing.

RAYWARD: But it wasn't instead of the other, was it? You had them both?

T. AITCHISON: We had them both. We had the classification and the controlled language. The indexes for the abstract journals were still being produced. But the expectation was that the free indexing be the one that the mechanized searching and online searching would use. In the meantime, the SDI project had started and—as I say, it had eight hundred people—and went on for a couple of years and was very successful in the sense that it got a lot of people, real research workers and engineers, very interested in it. They did it and regularly gave us feedback. It went surprising well in that very few people fell out. We had, a couple of times, the embarrassment of the widow writing, saying, "I'm very sorry, my husband can't continue." [laughter] Later, I passed it on to my deputy, Peter Claque, to complete the work. He wrote the report. We then decided that we would offer SDI as part of INSPEC. And that had a fairly checkered career.

RAYWARD: Is that when you started to offer it first of all, on cards?

AITCHISON: Yes. We'd been offering it on cards in the test with the eight hundred profiles, you see. It was large scale. We never got anything like that thereafter when we were doing it commercially; we went into smaller numbers. I've never been able to understand why SDI didn't do better. And haven't gotten an answer to that at all. But everything about it convinced us in the test.

RAYWARD: Didn't, subsequently you publish—they're like standard profiles. Six or eight or twelve—

T. AITCHISON: Yes. We did Topics, as we call it. That worked out fairly well. That was quite successful. Yes. It was easier for people to subscribe to. The other one was going to require them to put a fair bit of thought into compiling the profile, and, more importantly, to actually read what came out. Yes. It confirmed my belief that given a fair wind, people will avoid information rather than rush to it.

RAYWARD: Tom, there was a major process of revision of classification and language control from the *Physics Abstracts* days to INSPEC. The UDC [Universal Decimal Classification], I think, was used initially for the classification of *Science Abstracts* and then, presumably, at some point, was abandoned. So I wondered what the story was there. And then there was a research project, I think, which you must have managed, to produce a unified classification.

T. AITCHISON: The UDC had been used by *Science Abstracts* for some time. But, particularly as time went on, it was realized that the UDC was not being kept up-to-date and that it was a cumbersome thing to use for the classification of materials in the detail that was required. So, it was decided that—in 1967—it should ceased to be used. That coincided with the starting of the mechanized service so the mechanized service never actually used UDC. Then, as time went on, as we got used to the mechanized service and developing the operation, it became clear that there were great advantages in not doing anything more than once. Up to then, we had congratulated ourselves on producing the same abstract for all of the services; whereas, once upon a time, when there was *Physics Abstracts* and *Electrical Engineering Abstracts* as separate operations, if anything was required for both services, it was treated as a new document and done again.

RAYWARD: So it was abstracted twice.

T. AITCHISON: It was abstracted twice. This was something that was stopped, obviously, when we mechanized *Science Abstracts*. But we'd still had the problem that we were classifying for *Physics Abstracts* and classifying for *Electrical and Electronic Abstracts* and *Computer and Control Abstracts*. It was an obvious thing to do to bring the three classifications together and produce a unified classification. It was obvious but took a fair bit of time to do it. Through the years, we had various inputs from AIP on the classification of physics which got quite involved. For the thesaurus—we started a thesaurus in comparatively early days as part of our research project and developed that. The thesaurus, I think, all of the time, really, was something that we looked upon as covering the whole INSPEC database. So, that developed. It

didn't conform to all the thesaurus principles that my wife espoused, but it obviously went reasonably well. And it's still going strong, and it's still being used.

RAYWARD: Jean [Aitchison] wasn't involved in the development of this thesaurus?

T. AITCHISON: Not of that thesaurus, no. She was concerned with some parts of the indexing material when *Science Abstracts* was still unmechanized. I mean, she was concerned then but not thereafter.

RAYWARD: There's another matter I was curious about, too. The relationship with the American Institute of Physics and the constant interaction across the Atlantic.

AITCHISON: Yes, that was always a very difficult thing for us. We were conscious of the fact that we were a British organization—and a British electrical engineering organization—who were producing a physics database for the whole world. And the AIP—and perhaps the American Physical Society but not so obviously—but AIP quite clearly felt that it would be much more sensible—or God had ordained it, really—that it should be done by Americans rather than Britons. And, so, there was this constant concern and unhappiness. I don't think they saw an easy way of doing it and producing an abstracts journal.

[END OF TAPE, SIDE 1]

T. AITCHISON: AIP had made regular meetings with IEE to discuss developments with *Science Abstracts*. There had been a committee set up to control the *Physics Abstracts* part of *Science Abstracts* long before the mechanization, so it'd been continuing on that basis.

RAYWARD: This is a committee that included the people from the AIP?

T. AITCHISON: That's right. Yes, a joint committee. With the setting up of the mechanized service, they were also involved and would have regular meetings with us. Invariably, the meetings were [long pause] difficult. They were unhappy about, I think, their lack of control of the service rather than with the service, itself. And there was considerable concern about what they ended up with author abstracts. They were firmly of the belief that author abstracts were part of the total copyright and doubted whether they should be made available freely. This disagreement developed in such a way that in 1973 AIP withdrew permission for INSPEC to use

author abstracts for all AIP journals. So that from 1974, INSPEC discontinued the use of author abstracts from all AIP journals and re-abstracted them, themselves, which was quite unfortunate.

RAYWARD: Well, that would be a major task because of the size of publishing at AIP?

AITCHISON: It was, yes. Yes, it wasn't easy. We had to pick up the ball and run with it fast.

RAYWARD: Did that affect the subscription costs? I mean, the costs must have escalated considerably.

AITCHISON: Yes, but we managed to do it without raising the subscriptions. We couldn't afford to show that there was anything different going on. I mean, in relation to the database—and we had a very good reputation to maintain—the word was that everything was fine. "Trust us. Trust us."

So, that continued for a very long time. And one of the worries that was constantly with us was what we'd have in physics if AIP set up in opposition and what would that do to INSPEC's viability? In my time as director, I was pursued by the Board saying, "It's all very well. You're doing very well now, but what about in ten years time?" [laughter] I felt that they didn't know in their own businesses what was going to happen in ten years time, but it was AIP always on the horizon, as it were.

RAYWARD: AIP was at this time going through the same sort of mechanization process for the publication of its journals, wasn't it? There was that major research project that Pauline Cochrane was involved in, with Stella Keenan assisting her.

T. AITCHISON: That's right. Yes.

RAYWARD: And, I mean, it would have made such sense just simply to supply the journals or the abstracts, even, in machine readable form but because of this problem—

T. AITCHISON: This didn't help with it, no, put it that way.

RAYWARD: So, when did this disagreement get resolved? It has been resolved, hasn't it?

T. AITCHISON: I was trying to think of this, and I'm not—Sorry. Put this off [Break in recording].

T. AITCHISON: As our relationship with AIP became less friendly, we developed a much closer relationship with IEEE [Institute of Electrical and Electronic Engineers]. And IEEE basically was happy to go along with, for the most part, the INSPEC database. In fact, they became our agents. We became their agents for their primary publications, and they became agents for the secondary publications, as well. We eventually set up an office in Piscataway, which was the IEEE complex there. So, that worked very well. And they provided us with abstracts and things like that.

Then, in Karlsruhe, there was *Physikalische Berichte*. And that was competitive with *Physics Abstracts*. We had various interactions, and lots of meetings with them to work out how we might amalgamate our two operations without any useful result. But that was another dimension that was a sort of cloud on the horizon again. And, of course, it became even more of a cloud when they set up STN [Scientific and Technical Information Network] because, then, AIP was feeding things into STN, and there was a question of, whether INSPEC was going to be squeezed out in any way. But, as things went on, most of these problems were resolved—partly, I think, by people either retiring or changing, and time.

RAYWARD: Who were the people that you were dealing with at the AIP?

AITCHISON: Bill Koch was the director. And he was the one who had the strong views, naturally.

AITCHISON: Sometimes, we got very close to agreeing on things, and then they fell apart again. I mean, we were not all sweetness and light in that IEE had had *Science Abstracts* for a long time, were happy with it, wanted to keep it and, basically, didn't want anyone else coming into their field.

RAYWARD: So, to what extent were some of these problems and decisions commercial?

AITCHISON: Well, they're all commercial. No! That's not fair. A lot of them had a commercial basis, but other ones—as is, I think, quite common in the information field—come from people wanting to do it for their own aggrandizement. They can see it as something that they rather like to do and they rather like the halo.

RAYWARD: Eventually, STN really became a host, wasn't it? I mean, so that, presumably INSPEC would be available on—

AITCHISON: Oh, yes, that—it was a host. That's right. It started out very much as *Chemical Abstracts*, another part of *Chemical Abstracts*, as it were, or another part of the online access to *Chemical Abstracts* and developed from there. At that stage, there was the question of whether AIP would feed their material in.

RAYWARD: It would be interesting to follow up that relationship area, the relationship with the AIP to see just where it's ended up. So coming back to that period—you know, when things were really starting, and your research work was progressing—was also the time when things like UNISIST [United Nations International Scientific Information System] were getting under way, the UNESCO-ICSU-AB. And I wondered what contacts you folk had with them.

T. AITCHISON: The main contact was J.R. Smith, the original director of INSPEC. He eventually went to BIOSIS [Biosciences Information Service] as head of research. He was very much involved with UNISIST, and even more the previous one, ICSU-AB [International Council of Scientific Unions Abstracting Board]. I gave papers at some of the conferences but was never involved as a member of the committee. I was very much concerned with other organizations which were rivals in a sense.

RAYWARD: I notice, too, that at one point, INSPEC began to incorporate the indexing of chemical, numerical data. And I wondered what was involved with that and the extent that brought you in contact with CODATA [Committee on Data for Science and Technology]—things of that kind. Because that must have been a major development.

T. AITCHISON: Yes, that was later. And it was basically doing it to suit our customers rather than as an international thing. Yes, it was a major step because it involved considerable effort on behalf of the information scientists.

RAYWARD: Systems development?

T. AITCHISON: Some systems development but actually putting the material in. That was in addition very much to their normal work.

RAYWARD: Did that bring you into some conflict with *Chemical Abstracts*?

T. AITCHISON: No. No. That's the thing. We were doing it as a means of physics and electrical and electronics and other people using the data rather than chemists using the data. We didn't find that. Chemists were obviously going to *Chemical Abstracts*, not to us.

RAYWARD: How did you deal with making the original articles available?

AITCHISON: This has always been the problem in the sense that you could use the abstract and have then to get the journal. We looked at various things and had arrangements with some people for a short time. But I think we put a lot of the emphasis on the IEE library providing the material.

RAYWARD: Can I ask you—I've always been interested, I think. But you were actually acquiring all those journals, weren't you?

T. AITCHISON: Yes.

RAYWARD: So they would have been housed in the library.

T. AITCHISON: No, they weren't. The library got its own copies of the journals.

RAYWARD: So, what happened to the—

T. AITCHISON: We tore them up, happily.

RAYWARD: [whispering] Really?

T. AITCHISON: Yes. Each article was a separate item. So it went into a plastic bag and was dealt with as an article. That was not the reason why we were not able to provide the material, but that was how the production process worked. One of the things about *Science Abstracts* was that it had always, from the early days, been done on the cheap in the sense that everything was looked at to see what was the minimum effort that could be put in. This worked out extremely well. For instance, when we split up the journal into the eight separate articles, we could then use the pages of the article. We weren't transcribing the title; we marked up the title on the page of the article, how it was going to be input. Whereas, in the early days of the American

organizations in particular, they used to have, if you remember, these lovely big input sheets with boxes to put the letters so that the keyboarder could easily type it in. But, obviously, that means that you're doing everything twice, at least, with all the resulting errors that are bound to occur. This way, when our proofreaders came to check what had been input, they had only the one thing to look at.

RAYWARD: So the keyboarders worked, actually, from the original?

T. AITCHISON: From that. And then, of course, you had another page with all the additional input information that we put on.

RAYWARD: And then how, physically, was the abstract then attached?

AITCHISON: There would be an abstract in the paper. The author abstract would then be edited by the information scientist first of all, to make sure that it seemed a fair representation of the paper, and then, that it was written in INSPEC's style. They would make some alterations that way. And then they would add free indexing and all the other bits and pieces, journal, date, and so on. This was on a separate sheet.

RAYWARD: Yes. They would mark up the abstract actually on the page.

T. AITCHISON: On the page. That's right, so they weren't retyped.

RAYWARD: Isn't that interesting. So DIALOG [Dialogue Programming Language] was one of the early ones, obviously. So you were one of the major databases for DIALOG.

T. AITCHISON: Yes, we had a long, continuing relationship with DIALOG.

RAYWARD: Can you remember how all that developed? [long pause]

T. AITCHISON: It developed very early. Roger came to see us

RAYWARD: Roger Summit.

T. AITCHISON: Roger Summit, yes. I think actually 1969, 1970, we were right there either 1970 or 1971, on DIALOG. And that was fine. Then we were offered on a large number of other hosts, of course. That proliferated quite remarkably and very successfully.

RAYWARD: How was the financing of that done? Presumably both they and you had to get something from this.

T. AITCHISON: Yes, we got royalties from them.

T. AITCHISON: We provided them with a tape. They gave access and reported on the usage that had been made of the tape and gave us the appropriate money as a result of it. It was one of the things that used to worry our accountants, or rather, our auditors. Because they wanted to know how we could prove that usage had been fairly reported, and so on. In the early days, of course, one couldn't clearly see how this was going to operate. And I remember, at one stage, having another potential online host discussing with us how much he would charge us for putting our database up with the expectation that we would get the money back later. Yes, I think it was a very fruitful relationship we had with DIALOG and then with a fair number of other people. But DIALOG always tended to be our largest host because it was in early, but we ended up with a fair number of others.

RAYWARD: Yes, I've seen a list somewhere of the hosts now. Yes. So, I suppose, then the next development was CD-ROM? Yes, to translate the database to CD-ROM.

T. AITCHISON: Yes. That's right. And that took a fair bit of time—I can remember because this was around—in my days as Director. We took a fair bit of time to come around to doing it because it was quite clear that it was going to make a difference to a number of aspects, particularly, online usage, and so on. So, it evolved over time rather than anything else.

RAYWARD: How did it affect your print runs?

T. AITCHISON: Well, of course, I can't tell you what happened over the last twelve years. Earlier, there had been a decline in the print runs, continually, over time. There were not so many new subscribers coming along. Fortunately, we had the large libraries keeping going. The effect of the CD-ROM happened after my time.

RAYWARD: I imagine that the CD ROM would be a major reason for decline. Because the equivalent of having print in the electronic form, right there—

T. AITCHISON: Yes, yes.

RAYWARD: Document supply.

T. AITCHISON: Yes, the BL, British Library up at Boston Spa did an enormous amount of the document supply for people coming from our database but we hadn't a particular relationship with them. They were there supplying the world, as it were. And they obviously had our list of journals and knew which ones we were adding. I think the document supply service is going on and on. But whether they're supplying it as paper documents or otherwise is another matter.

RAYWARD: Because I suppose that one of the next things is that for places like INSPEC, they won't, in fact, make a distinction between the secondary and the primary service. I mean to the extent that you can have access to the journal text online. Presumably at some point there will be a seamless shift from indexing, abstracting—which is giving you a clue as to what you might want—to the full text. And that's when I imagine the relationship with places like the AIP in this sort of development then becomes very important. Because how do you have access to the text, you know, of a rival organization as opposed to cooperating or a confederation of agencies or whatever it is.

T. AITCHISON: Yes, I think this is the thing that has certainly happened over the last ten years. That, more and more, you have a whole host of different people with different roles and may have more than one role. So you've got Elsevier [B.V] providing a large number of printed or primary journals, also producing an abstract journal. And all these things can be available in a sense, on the Internet or wherever else. And then you've got the people doing CD-ROM. And I'm just interested to see that it still all seemed to be, if not thriving, at least, still existing. Many of the same names are still there; others, like DIALOG, have gone.

RAYWARD: Yes, it seems to have been completely changed.

T. AITCHISON: Yes. Once upon a time, we knew exactly where we were. Now, there's so many different ways to access.

RAYWARD: Yes. And I imagine that in the next few years there will be quite a shakeout too. I think that's what makes it interesting to look at—I mean, one of the things that INSPEC has

going for it—and you mentioned it—was that it had a very long history and that gave you a weight and substance that helped when it came to dealing with competitors.

T. AITCHISON: Yes. Indeed. The other thing was that we decided that we really had to deal with errors and problems in our database. Because one of the troubles was that when you get an online search you could list, and you could see all the different errors. If we made a simple spelling error in a person's name or anything else, that would come up when you were making an alphabetical list. In other words, it was pinpointing all the errors. And we realized that, particularly in the first year or two, we hadn't reached the quality we eventually obtained. The other thing, of course, was that the classification had evolved over time. So it was more difficult to go back and search over the whole database with a number of different classifications. So it was decided about eighteen months before I left that we really ought to do something about it. And I don't think any of us really realized just the sheer scale of it. By that time, we had three-and-a-quarter-million documents, and our computers were working full-time on doing the normal database. That goes up and up every year. When I left, I think it was about two-hundred-and-fourteen-thousand documents a year, and I think it's now three-hundred-thousand-and-something. So we had very little company time to do anything else. But we had to do it. What we had to do was to look at each of these abstract items in turn and decide whether they were all right or not. Obviously, we could set up systems to do it, where it would be done automatically—such as straightforward corrections. Then there would be other ones—we had a very complicated algorithm before we got it right—where we could change the old classification into the new one. However, there would be other ones where, simply, we had to print out and say, "What do I do about this?" All of this required computing time to do it. We couldn't afford to install another duplicate set of computers to do this, so it was a matter of fitting it into our schedule. We found that—and, of course, we were normally working overnight—there would be some time between, say, three am and seven am when you had finished, and you hadn't started the new day, and that was the time that we would fit in some of this revision work. Then, of course, you had the weekends when you could get going,—unless it was one of the weekends when you normally did your updating of [laughter] monthly indexes or something similar. Bank holidays were great and everybody rubbed their hands at Christmas. I can remember the first Christmas that we were doing this. I told people we'd got things set up, it was going to be automatic, and to forget about it. We had an operator just checking that things kept going, and not to do anything further. After the holiday, I went in and I had a look at the log for Christmas, and sure enough, four people had come in to see that it was all right. The INSPEC staff involved were fabulous. There were two people who were distributing stuff and making sure it was right. And they used to have enormous piles of printouts in their office waiting to be dealt with.

RAYWARD: To achieve that revision, you were applying the new classification retrospectively to the whole database in effect and the thesaurus and all that kind of thing.

T. AITCHISON: Yes. It was a fantastic thing. It was one of these things that you couldn't impose upon people. They had to seize the problem, take it as their own and work out what to do with it. I mean, they had built up an enormous head of steam. They wanted to do it. I can remember going to my board and saying that we wanted to do this. And they said it would be very costly. I said, "Yes, but—" And I remember, they awarded me a small amount of money, some £100,000 or something similar, to start the work. I'm not sure whether they thought that was going to be the amount that it was going to cost, but I took it as the amount to set the thing up. And I don't think we ever actually had a board minute that said you we were authorized to spend the enormous sum of money that was eventually involved.

RAYWARD: Did you find some problems applying, retrospectively, something developed recently to something that was indexed a long time ago. There'd be some problems, naturally, wouldn't there—with terms and concepts used in an earlier time that would be very difficult to translate into as a field moves on and moves away?

T. AITCHISON: It was difficult, but as I said, we had some wonderfully clever algorithms that we used. But we were still left with a residue of things that had to be looked at again from scratch, as it were. The idea and the success of it was to make sure that there were as few of them as possible. But, of course, as soon as you say, "as few of them as possible," there's going to be a lot of them in three-and-a-quarter-million.

RAYWARD: Even if it's a small percentage of that it produces a lot of records—

T. AITCHISON: Right. Yes. The same thing, you see, that I found to my cost when we were doing the SDI one with the eight hundred profiles. I thought that it would be interesting to find out how many of the eight hundred profiles had a particular thing in them. So, I said to the girl who filed them, "Have a look at this." It was only to my embarrassment hours later that I realized that if you're doing anything eight hundred times, even if each only takes a minute, it's still a very long time. [laughter]

T. AITCHISON: Of the people that I had contact with, Cyril Cleverdon was the one, I think, that influenced me most and I admired most in a lot of particular ways. And I'm not sure he ever got enough credit, but he got a fair bit of credit. I think he got perhaps more credit in America than he did in Britain.

[END OF TAPE, SIDE 2]

[END OF INTERVIEW]

INTERVIEWEE: Jean Aitchison

INTERVIEWER: W. Boyd Rayward

LOCATION: Letchworth Garden City, Hertsfordshire, U.K.

DATE: 4 July 2000

RAYWARD: Jean, tell me something about yourself and your initial involvement in thesaurus development. I know you've become one of the international experts on thesaurus construction, and that you've had a long association with the CRG [Classification Research Group], but how did you start in this field?

J. AITCHISON: I was running a large library in the English Electric Company—which has since been taken over by the GEC [General Electric Company]—when I thought it would be good idea if we had a better classification system. As I was in the CRG, I had numerous ideas about facet classification, and so I hoped developing a classification system for GEC would also afford me the opportunity to develop something for my own company.

RAYWARD: Had you been in CRG from the beginning?

J. AITCHISON: Not quite from the beginning, but certainly since 1955. I'm uncertain when the CRG was founded, but that was how I became involved.[1]

RAYWARD: So let's discuss the early days of the CRG for a moment; specifically, the influence of [Shiyali Ramamrita] Ranganathan, facet classification, chain indexing, and so forth.

J. AITCHISON: There were some people in CRG who had been influenced by Ranganathan while they were in India during the War [World War II], which is how the facet influence came about. Those people include Mr. [Jack] Wells, who was the editor of the BNB [British National Bibliography], possibly Eric Coates, and probably Douglas Foskett.

RAYWARD: I think you could include Bernard Palmer in that list.

[1] The Classification Research Group [CRG] was founded in the UK in 1952.

J. AITCHISON: Bernard Palmer, yes.

RAYWARD: Did you ever meet Ranganathan?

J. AITCHISON: Yes. When I decided to make the classification system for the English Electric Company library at Whestone, near Leicester, I arranged to meet Ranganathan in London. I had a conversation with him there. Also, I think I had met him at the Dorking Conference [International Conference on Classification for Information Retrieval] before speaking with him in London.

RAYWARD: What was the purpose of your meeting with Ranganathan? What was he like?

J. AITCHISON: From what I can remember, I wanted to ask him how facet analysis could be suitable for an engineering library. Of course, that was a long time ago, and all I can remember is his small, fairly bent figure wearing, I believe, black. It was quite a long time ago. He was at the Dorking Conference, but I don't think I spoke to him, personally.

RAYWARD: Let's move forward to when you were developing the classification system for the English Electric Company. That system becomes the Thesaurofacet—

J. AITCHISON: Well, not immediately. We produced three editions of what we called, the *English Electric Faceted Subject Classification for Engineering*, between 1958 and 1961, I think.

RAYWARD: Did you develop that?

J. AITCHISON: Yes, and then we had it published. First of all, we classified only part of the library, consisting of articles in the information bulletins. They were put into the new system to see how it worked. And it worked reasonably well. Then, with the help of everyone in the library, we carried out a complete reclassification of the whole stock.

RAYWARD: So that effort, in essence, created the UDC [Universal Decimal Classification].

J. AITCHISON: Yes. But our problem was that the chain index required a helpful citation order to operate well. Mistakenly, we created a citation order in which machines were the most

important things, then parts, materials operations, and finally, the physical phenomena; and that meant later facets in the chain became distributed widely. Sometimes, a phenomenon like metal fatigue, which our engineers were very interested in, was scattered completely in the index. So that was one of the main drawbacks. And later on, I think in about 1961, a Cranfield [College] research team came along and tested it. I think they also found that the scatter of important engineering concepts was a drawback. The system worked reasonably well, otherwise.

So I think that's probably why I said that, in the end, I'm not sure whether it worked better than UDC. Certainly, it was more focused toward the subject field in which we were interested. Another problem with that classification was that we decided—or I decided because that was how CRG was thinking at the time—to divide the whole field first into facets so that machines were grouped together, the components were grouped together, the materials, the operations, and so forth. Subjects that would have been grouped under disciplines in UDC were separated and difficult to find. Later, when I developed Thesaurofacet, I decided to divide by discipline or subject field, first, then by facets.

In 1961, I got married and went away. When I was married, I worked a few years with Cyril Cleverdon at Cranfield.

RAYWARD: Would you describe your work with Cleverdon?

J. AITCHISON: Yes. I was involved in some of the evaluations in Cranfield 1 and 2. At the same time, Cyril was always thinking of new things he wanted to test or new research he was doing. He was wonderful in that way. And I attempted to help him by testing other systems or carrying out tests based on some of his ideas. I co-authored, with Cyril, a report on the metallurgical literature index of Western Reserve University, published 1963, for example (1).

RAYWARD: Jean, where were you living at that time?

J. AITCHISON: Yes, we were in Luton at the time. When I spent my days working with Cyril, I used to get people to come look after the children. I'd come back home, do the work we thought we'd have a look at, and then went back maybe two weeks later to talk about it. It worked out, so we did it.

RAYWARD: So tell me something about Cleverdon himself.

J. AITCHISON: He was a very kind man, and very considerate of the people who worked for him. He was fun to be with, too. He had a lovely wife, Mary, and three children. They were all

at Cranfield College, and they lived in a house nearby. Sadly, one of his daughters committed suicide, but that was many years after the period we're discussing.

RAYWARD: He sounds as if he were very dynamic and full of ideas.

J. AITCHISON: Yes. I mean, apart from being such a kind and loving person. His ideas were brilliant, as was he. And one always felt that it was difficult to keep up with his mind and his work. It was quite a challenge.

RAYWARD: With the combination of your work and your family, you must've been quite busy.

J. AITCHISON: Yes. I was probably doing other evaluations and so forth. But it wasn't until about March 1967 that I started to work on Thesaurofacet. Don Kennington wanted a new edition of the classification, I think, or maybe he wanted a thesaurus—I'm not quite sure which. But then, looking at the classification, I realized there were some defects. And we started to make a completely new faceted system.

RAYWARD: Please elaborate.

J. AITCHISON: Obviously, one of our resources was the classification we had created already. Another source was the 1967 editions of the *Thesaurus of Engineering and Scientific Terms* [TEST]. I looked at TEST for additional terms because, although the subject here was engineering, I had broadened it somewhat from mechanical, electrical, and nuclear engineering, to other disciplines. So it took a long time. You see, in those days, there was no mechanization.

RAYWARD: Not even punch cards?

J. AITCHISON: No, I didn't even have punch cards. I made the classification first, and from that, I developed the alphabetical thesaurus. That is how I always work. The alphabetical thesaurus was kept in twenty to twenty-five shoe boxes around the spare bedroom. In fact, the room had to be locked during the day to keep the children from going in and upsetting the cards. I think I must have been working on it for about three years, from March 1967 to late 1969.

I had help from some of the staff at Whestone, particularly Alan Gomersall, who I think is about to retire from his post at the UK Science Library. He did some work on the mechanical engineering sections. I also got help with the computer sections—which, of course, were fairly

primitive at that time. In the end, the Whestone Library, English Electric Company—they actually published the Thesaurofacet. It was a long, difficult job that ran into many problems because, in 1970, there wasn't any mechanization.

RAYWARD: So it was all hand typeset?

J. AITCHISON: It was all hand done.

RAYWARD: What about colleagues in CRG as you were developing this? What did your colleagues in the CRG think of your ideas?

J. AITCHISON: I think they were somewhat astonished. [laughter] That was a long time ago. I suppose they were very supportive, but I probably was more concerned with how it would be received at the English Electric Company, and how their engineers would use it.

Unfortunately, not long after it was published, the General Electric Company took over the English Electric Company and closed down most of the libraries. And the Whestone Library, which had thirty staff members under the English Electric Company and had become the coordinating library for the whole group, was reduced in size to only five staff. Hence, Thesaurofacet died, essentially, because they weren't people to use and update it. It's absolutely out of date now, but it remains an example of how one might lay out a facet classification supported by a thesaurus.

RAYWARD: Still, it was a very unique project for its time.

J. AITCHISON: And, of course, there are still thesauri like it in existence, such as the *British Standards Institution's ROOT thesaurus*, which has nearly the same format as Thesaurofacet (2). I advised on the ROOT thesaurus's design, but there hasn't been a new edition since 1989.

Up until around 1999, I was still making thesauri like in the ROOT thesaurus's style, and there are still one or two in use. For instance, England's Department of Education and Employment has a thesaurus in the same Thesaurofacet style.

RAYWARD: What happened to you after the General Electric Company's takeover of the English Electric Company?

J. AITCHISON: The takeover didn't matter to me because I was an independent consultant. Afterward, I specialized in making thesauri rather than performing other consultancy work, such as evaluations of library systems. In fact, between 1973 and 1977, I worked on the UNESCO [United Nations Education, Scientific, and Cultural Organization] thesaurus, which was in the Thesaurofacet style, originally (later editions are no longer in that style). Another example of a system I made in the Thesaurofacet style, originally, is the *International Thesaurus of Refugee Terminology for the UNHCR* [United Nations High Commissioner for Refugees] (3). I also made a system for the Royal Institute of International Affairs, in London, which was published in 1991 and is still in use.

RAYWARD: What is distinctive about that connection?

J. AITCHISON: The form is that you get something that looks like a classification, which looks almost like the Bliss Classification [Association,] [BCA]. In the systematic display section of the thesaurus, and then there's an alphabetical which is derived from the classification. And, so, you get the benefit of the classification and the thesaurus together.

RAYWARD: And you were saying that the UNESCO system was a very political operation.

J. AITCHISON: I think it was political within UNESCO. Some other departments that had their own thesauri might not have liked the way that that one had been produced, for example. So that was an internal problem.

RAYWARD: Did those internal disputes impinge on your work?

J. AITCHISON: No, I should say not.

RAYWARD: So, then, of course, there's the Dorking Conference in 1957. You've given us your reminiscences in the Conference's proceedings. Is there anything else that's come to mind about that Conference?

J. AITCHISON: That was when the importance of faceted classification was set out, which is why it was so memorable. But I don't think I have any other specific recollections about it. Apart from Jack Mills, when he was quite a young man, lecturing at the conference and being so eloquent.

RAYWARD: Then let's return to the work at the CRG, and then, eventually, we'll discuss the new Bliss.

J. AITCHISON: Right. The CRG is still going strong. They've been looking at the Bliss schedules as they're coming out. And Jack Mills will bring along his chemistry schedules and bring up the points he found difficult. At the moment, Eric Coates is working on the technology schedules. He has been getting help from other members of the group. We're getting, now, towards the end of the Bliss Classification problem, so I'm not quite sure what CRG will discuss after that.

RAYWARD: Is it recruiting new members?

J. AITCHISON: Yes. There are several new members, including Leonard Will. Ia McIlwaine, of the School of Library Archive and Information Studies [University College London, UCL], had been the secretary; but, of course, she doesn't have time now because she is the director of the UCL School. We're a bit lost without her because she used to do the minutes. Anyway, the people who attend regularly are, of course, Jack Mills, Douglas Foskett, and Eric Coates. They are the main people.

RAYWARD: I went to a meeting quite a few years ago—I don't think you were there—when I was preparing an edition of some John Metcalfe's travel diaries. Jack Mills, Douglas Foskett, and a couple of other people had read and commented on those diaries, and they invited me to a meeting to discuss the diaries and John Metcalfe. That was because, apparently, there had been a notable meeting, quite some years before, with Metcalfe, who was polemical and against so much that had happened in this country. He was all for Cutter and specific entry. [laughter] You know, it's one of those silly, political things. It was fascinating for me because people's discussions of Metcalfe and his ideas recapitulated the kind of discussion that Metcalfe had actually reported. [laughter]

J. AITCHISON: I heard it. They tend to go around in circles.

RAYWARD: Yes. But this was because of Metcalfe and his limited views.

J. AITCHISON: Yes.

RAYWARD: Was your connection with Bliss, essentially, as a CRG member looking at the schedules?

J. AITCHISON: No. I've always used Bliss as a source for my thesauri, right from very early days, because they were fairly up-to-date and faceted; meaning, a lot of the work had been done already. So, certainly, I used the medical schedule when I was making a thesaurus for the Department of Health in the U.K. at that time. But the trouble was, in the 1970s of course, if you were all the subject fields—not all the subject fields had actually been dealt with by Bliss, so you had to make your own covering schedules for the fields that were not covered. I certainly used the political and economic schedules when I was making a thesaurus for the Royal Institute of International Affairs, because their interests were politics and economics, and the Bliss schedules for both were so good and so detailed. So we used them as the basis and altered them and added to them.

RAYWARD: Who prepared the edition of the schedule that you used? Because that wouldn't be the original text, would it? It must have been edited subsequently.

J. AITCHISON: I think the economics schedule we used was the published volume of *Class T. Economics, Management of Economic Enterprises*, 1987 (4).

RAYWARD: From the CRG, itself.

J. AITCHISON: But the political the penultimate version of *Class R.*, published 1996 (5).

RAYWARD: But, again a draft coming out of from Jack or—

J. AITCHISON: It was the penultimate draft. We also had an early draft of the law schedules. But that really didn't matter, because by the time the new schedules were finished there were many changes. Bliss was such a good basis to start with. And then the original classification was developed to accommodate the peculiarities of the client's needs.

RAYWARD: Yes, of course.

J. AITCHISON: Always. So we weren't just reproducing Bliss. It was just giving us a start. On the other hand, we retained many details of the Bliss economics and politics schedules.

RAYWARD: Did that work, in its turn, feed back into the further development of the Bliss schedules?

J. AITCHISON: I think the Bliss Association Classification probably has copies of what we've done, but I can't tell you.

RAYWARD: Yes.

J. AITCHISON: So, I have always been involved in Bliss, I suppose, even from the very beginning. And Jack has written me special schedules when I've asked him. For instance, when we needed international law, he wrote a special schedule for me. Mind you, since then, of course, he's done a much more elaborate classification in *Class S. Law*, published in 1996 (6). He was very generous in that way.

I've been on the committee since May, 2000. I can't tell you much yet about the work of the committee. But there's a lot of interest in Bliss in the university libraries at Cambridge. Heather Lane, of Sidney Sussex College, is now the secretary of the BCA, and I think she has the computer programs. So, it's my hope that there are a lot of people becoming interested in Bliss. Certainly, there is not enough money or publicity going into it.

RAYWARD: Is it something that could be used in the new Internet and web environment?

J. AITCHISON: Yes, absolutely. But, as I say, BCA doesn't have the money or staff to press for its use. And the number of libraries using it is fairly small. I can't tell you how many, but it's fairly small. I'm hoping that people making thesauri are using it as a source of relationships.

RAYWARD: You'd think, given all the madness of the web, that somebody would see it and put some money into its development.

J. AITCHISON: Yes. The UDC and Dewey [Decimal System] are being used on the web to organize web pages, I think. So I don't see why Bliss shouldn't be used on the web as well. But I think Ia McIlwaine and Nancy [Williamson] are using Bliss to update the medical section of UDC. How they're getting on with it, I don't know. I have not been following recent developments.

RAYWARD: Well, that's an interesting sort of cross-germination. You must have seen an incredible amount of changes in the physical application of thesauri, given that you started in the print world. Now, it's an online world and the worldwide-web world!

J. AITCHISON: Yes. I must say, it's a great help for people with bad writing, like me [laughter]. It's a wonder how anybody ever read the cards that I wrote. But I had some good secretaries who were able to decipher them. Obviously, now, I never write anything, which saves so much time. I suppose I've been using thesaurus software for quite a while now. It's only since the late 1980s that I've had software that produces the Thesaurofacet-style printout.

RAYWARD: Did you have a hand in that development?

J. AITCHISON: Somewhat. I haven't any computer expertise, but I did sort of hawk the idea around to various people who might possibly do something for me. Eventually, I found a firm that could: Information Management and Engineering, Ltd.; the creators of the Tinman library manager system, now defunct. They developed a faceted thesaurus program for me, and I used it for quite a number of thesauri. Then I found another software specialist, Fred Bore, who improved the layout of the printed classification. So I do have the software now, but there ought to be a much better one that anyone can buy fully supported, and one.

RAYWARD: Clearly, that's one of your main things, though, given the number of thesauri—just what you've been mentioning in our conversation.

J. AITCHISON: Yes. I'm no longer making thesauri.

RAYWARD: You're not?

J. AITCHISON: Well, no! [laughter] I had to stop sometime. So I think I did a last update of a thesaurus about a year go.

RAYWARD: So you've decided to retire.

J. AITCHISON: I think it may be time. But, you see, there isn't really a reliable, up-to-date program to carry on making thesauri in the Thesaurofacet style.

RAYWARD: What is the style now?

J. AITCHISON: I can show you. You'd have to shut that off.

RAYWARD: Do you know Elaine Svenonius?

J. AITCHISON: Yes.

RAYWARD: Well, she mentioned Ingetraut Dahlberg to me. She retired. Was she religious?

J. AITCHISON: Very. She had her own ideas on facet order, and she produced her own universal classification, which is used in ISKO [International Society for Knowledge Organization], for the bibliography section. She was a philosopher, as well. But without her, you know, ISKO wouldn't have happened, I think.

RAYWARD: And you think it's played an important role in keeping classification alive.

J. AITCHISON: It's still doing so. Absolutely. I mean, we have a big conference coming up in a day or two in Toronto. Were you aware of that?

RAYWARD: No, I wasn't.

J. AITCHISON: It's the main ISKO conference. This year, it's in Toronto in July. People value the published papers and bibliographies. Stephen Pollitt has designed special programs to search databases using classification system as a means of keeping up-to-date. He is important in ISKO. He is the U.K. representative. He's at Huddersfield University, currently, in the computer section.

RAYWARD: In the computer section. I see. These are some of those links, I think, that might lead into the new computer environment.

[END OF TAPE, SIDE 1]

[END OF INTERVIEW]

NOTES

1. Jean Aitchison and Cyril Cleverdon, “ASLIB Cranfield Research Project: A Report on a Test of the Index of Metallurgical Literature of Western Reserve University” (October 1963).

2. Jean Aitchison, *International Thesaurus of Refugee Terminology for the UNHCR* (United Nations High Commissioner for Refugees, 1988).

3. Milton Keynes, *BSI ROOT Thesaurus* (British Standards Institution, 1988).

4. Vanda Broughton and Jack Mills, *Class T. Economics, Management of Economic Enterprises* (London: Butterworth, 1987).

5. Vanda Broughton and Jack Mills, *Class R. Politics and Public Administration* (London: Butterworth, 1996).

6. Vanda Broughton and Jack Mills, *Class S. Law* (London: Butterworth, 1996).

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