Chapter 53

CHRISTIAAN F. VAN SUMERE

Gent

June 1st, 1997

VM = Vivian Moses; CVS = Christian Franz van Sumere; SM;
ClVS = Claudine van Sumere = Sheila Moses

VM: This is a conversation with Chris van Sumere in Gent the 1st of June, 1997.

So Chris, it has been a long time since we have seen you and I have forgotten much of your story. What was your early education and how did it take you to California?

CVS: Well, I studied Chemistry at the University of Gent starting at the age of 18 (1947 it was) and it takes four years in Belgium, two years Candidate and then two years for what we call Licentiate. This is a different title from what you have as Master in England but it corresponds to the Master's degree, the four years. This was actually in classic chemistry. I was not allowed even to take a degree in biochemistry. I finished even in my Master's job, you know, in the laboratory of inorganic chemistry. But I wanted to do biochemistry so I took my Ph.D. in that department working on several splitting enzymes, celluloses and hemicelluloses because I got a grant from the Brewery Council in Belgium and they were interested in these enzymes because they are very important in malting and so on.

So I was right away in the field of plant biochemistry, so to speak, and later on, you know, I returned many, many years later. But then I thought, well, after this Ph.D. don't forget we came out of the war and it might come as a shock to you but even certain of the compounds (*nur für Waffen SS*) I have used during my Ph.D. because the Germans left Gent the 3rd of September, 1944, all at once like that, and of course they left marvellous compounds from Merck behind so why should we throw them out and not use them? But this gives you the idea in what conditions we had to work. We came out of the war and many things were destroyed. We had very little to work with and we had very old equipment and so on and so on. And I thought, you know, this is not right. I must see that I get all sorts of modern things. The education in Gent was perfect, theoretically. And so I went to Canada with a post-doctorate grant, you know, from the Canadian National Research Council. But I forgot to mention that at the end of my Ph.D. I went already to Edinburgh to study with Prees (*spelling?*) on hemicelluloses. He was the Editor of the Journal of the Institute of Brewing. And he helped me also to obtain this grant in Canada and there we worked in the field of plant biochemistry.

VM: With whom?

CVS: Oh, I worked with several people, mainly with Ping Chu which was a brilliant Chinese, and I worked on the biosynthesis of glucosans in *Aspergillus niger* starting from pentose, labelled pentose.

VM: That was in Saskatoon?

CVS: Saskatoon. And then, you know, I followed the discussions there and, since we had been interested in germination, I heard that they had lots of problems with rust. You know that the rust, the *Ureda* spores, play a very important role because they germinate and the germ tubes enter the stomata and cause the infection in wheat. I noticed actually that the germination was very important there so I went to the discussions and said, "May I try a few experiments?" And I did and so we detected, in fact, the self inhibitors and the activators — because in rust spores we found cumarin as an activator but ferrulic acid and other phenolic acids were inhibitors so these were compounds which controlled the whole thing. This has a bearing on the resistance of certain wheat plants also because some contain more phenolic compounds than others, and so on.

I did not follow this too much any more lately; I have been interested in all these problems my whole life through. But lately, as I said, now that I am in politics, funnily enough, I follow less the literature, the scientific literature, although I am still interested. We then worked also on the cellulose-splitting enzymes of rust. So the old mechanism of infection, how it proceeds and so on, we published three papers when in Canada. And then from there, you know, already from my Gent time, I knew about the beautiful work done in Berkeley by Calvin and his group and this was always a wish for me to go there.

VM: How long were you in Canada?

CVS: I was in Canada about thirteen months together with Claudine; we worked together and we were very, very good, you know, as a team. And then, of course, before I left Canada, you see, I thought to spend there one year, which probably was a mistake. Later on I thought to myself, well you would have stayed there better two or three years. But anyway I had made arrangements since I had no grant directly for the United States, because I did not know exactly when I was going to go there, I had already made arrangements with a Belgian foundation and that had promised me to pay my stay in the United States. This was a grant which allowed me to live — to survive not to become a rich man, of course. This was not necessary.

VM: So you made contact with Calvin when you were in Canada?

CVS: I think...this I do not recollect so well any more. I might have written him before but certainly from Canada. He asked me the classical things, you know — what was my background, what I had done, what I had published and so on and so he accepted me. And we thought to go both there first but then Claudine became pregnant and could

not go to the Radiation Laboratory for obvious reasons. Because her father and mother were medical doctors, and unfortunately died a few years ago (they became very old, around 90), we decided that she would come home. Her father and mother had also studied abroad, you know, and understood the situation very well. And then I would bring her from Saskatoon to New York and then from New York I would go by bus and this was a lonely trip and I can assure you with mixed feelings I went to Berkeley. And do you remember I arrived there as an Eskimo, you know, clad like a...?

VM: No, I don't.

CVS: You don't remember that? You should not forget that we have temperatures in January when I arrived in Saskatoon of -42° below. It was very cold. And you arrived there in Berkeley and temperature was like spring weather, you know — 15° Centigrade. When I first arrived in the laboratory everybody thought I was a very strange man, you know, but after a few hours I was also running without any pullover and so on and so on, but, of course, I can imagine even in the centre of the United States it was very cold. They found I was a rather funny guy.

VM: So when you arrived in Berkeley you came by bus. Did somebody meet you from the bus?

CVS: No, I think I came on my own from San Francisco. You know the bus went to San Francisco. And then I took there another bus. There was at the end, you know, of.....what is the name of the street again? California or something? In San Francisco there was...

SM: A bus station.

CVS: A bus station. An old bus station.

SM: First and Market?

CVS: Yes. First and Market; Market — that was the name of it. And you know there was also the little train...

SM: F train.

CVS: Yes. I am not sure any more if I came by bus or by the little train because I went so many times to San Francisco that I can't remember any more, but I think that it was by bus. So, I walked up to the laboratory and I think, you know, after asking several people, I arrived. It must have been at Dee's place, or something. And anyway...

VM: Dee Lea Harrison, the secretary...?

CVS: Yes, we called her Dee. And I know that after my first visit to Calvin, you know, I have still the book and where he wrote a few notes in and he presented me and he said, "Well, you know, I explained things and we had discussions and in the

beginning I will beat you probably 100% of the time but later on you will also win a few battles". I am not sure if I won many battles but anyway after a few months I could better discuss...

SM: May I ask which month you arrived in Berkeley?

CVS: I arrived in January, early January.

VM: Where did you live?

CVS: Well, Dee found me a place on Hearst Avenue close to Euclid. I do not know exactly...we went to visit the house a couple of years ago but I do not know the number exactly. It was close to Euclid and it was very handy in this sense that I could walk to the laboratory and even I did so at night and during the night and did little jobs for everybody because I was very close. And I remember in 1976, when Claudine went with me to the lab., that Dick Lemmon said immediately, "Madame, he should not do any more what he did before. Now we have to bring...you know we have a shuttle bus for students from the library to that digs." He was imagining this park but I wasn't minding...2 o'clock...

VM: It was quite safe at that time.

CVS: It was quite safe and I went there a lot. It was sometimes lonely, I agree, but I did it many times.

VM: So when you first came to the lab. presumably you talked to Calvin about what you were going to do.

CVS: Yes, that's right. Actually I had been involved in three subjects. The first, you know, was one that I worked on under the guidance of Ed Bennett which is a very nice man and I like him very much. Actually I think it was the labelling of A and B and C and B and all this sort of things starting from labelled purines and pyrimidines. And I think it was just a sort of training course.

VM: And you did this synthetically or biochemically?

CVS: Biochemically. As far as I remember, you know, we had precursors, labelled purines and pyrimidines, and I fed them to algae and then tried to get out...But you see they changed rapidly the subject and, you know, I always thought it was a sort of training course I got. They were interested, of course, in these labelled compounds but there were other problems they were more interested in.

VM: Did you do this in Donner or ORL?

CVS: This was in the laboratory next to Dee's office.

VM: In ORL.

CVS: In ORL, yes. Close to the cyclotron. At the end of this office you had the cyclotron. I was working there opposite Helmut Simon, you remember?, and back to back I was standing to Mel Look who was a good friend and unfortunately died. As I told you he organised our last trip in July, 1995. It is not yet two years ago and six months later he died, unfortunately. We are very sorry for that.

And then the second problem then I got, you know, actually the one I have been working on maybe the most, was the effect of gamma radiation on the ability of algae to photosynthesise and to grow and this was a job I did with Ozzie Holm-Hansen and there is a report. From the first there is also a report but I can't remember exactly what the pages in the UCRL reports are but this one is UCRL Report 3830, June 1957, from pages 42 to 47. If you are interested I can give you rapidly what the meaning was, in a few sentences.

VM: Yes, sure.

CVS: Well, what we did was study the effect of gamma radiation from the cobalt-60 source uphill (*i.e. on The Hill*), huh? The effect of gamma radiation on the photosynthetic abilities of — and the viability, I should say — and the viability of *Chlorella pyrenoidosa.* The photosynthetic uptake of $C^{14}O_2$ was not very sensitive to radiation doses up to 1 million reps. However, growth was strongly affected by a dose of 100,000 reps and the algae started clumping, you know, like that, and did not grow very well any more so their genetic apparatus must have been hit very badly. Well, we tested always after irradiation the photosynthetic abilities and, as I have said, you know, up to 100,000 reps the photosynthesis went on. It is only from one million that it really was hurt. But, of course, also it decreased because the reproduction of the algae was not any more as it should have been. So actually the gamma radiation was hitting mainly the genetic equipment, in my opinion, so the reproduction any more of the algae but strange enough, you know, at least at up to 100,000 reps, you had still incorporation. This was remarkable. So we did it also right away, you know, after irradiation and then after cultivating them for a week, you know, under the classic conditions.

VM: So you must have learned the technology — the chromatography and the radioautography, all of that — you learned that from Ozzie mainly, did you?

CVS: Ja, I think everybody — Ed Bennett, and Ozzie; Helmut was also before me. You know, it was a family. I must say also Barbara Metzner helped me with these experiments. And I think that I have paid a price. You see that is from gamma radiation. Nobody is sure about it but I always, think, you know...They treated it in the University and said well, for the moment it is not dangerous.

VM: It is a slight skin....

CVS: Ja but they have taken it away.

VM: A slight skin tumour?

CVS: Ja. Well, no, not a tumour really but, you know, something that was different from the rest. I was sitting there...and this is a hypothesis I do not know. Was there a slight amount of gamma rays that came out of the equipment anyway?

VM: You didn't have a monitor?

CVS: Well, we had to hold the films in our hands and so on and they were monitors but, you know, as I said I have no direct proof. But it was the place where I was sitting there. So I think that this work had also a bearing on what could have been the effect of the dirty bomb. I think that was the reason why they were in those days interested in the dirty bomb, which was the atomic bomb which was then, you know, producing the hydrogen fusion. So, in fact, a hydrogen bomb and then with mantle of cobalt-60. This was the dirty bomb. And this was the question — what happens if this explosion takes place and you have this fallout of cobalt-60 and what happens to vegetation? And I think this was one of the reasons... I was always impressed when I used, you know, irradiations of a million reps and so on that in a few seconds, so to speak, the test tube turned black, you know. We produced holes, of course: we shot out the electrons, ions. Sorry if I use this poor way of putting it in English.

VM: No, that's fine. Was this not the time when people were taking swabs from the gutters? Do you remember Karl Lonberg?

CVS: Yes, I was looking for his name, Lonberg. The one with a black pillow usually...Ja, ja, that's him.

VM: He was taking samples from the gutters on the roof and finding radioactivity.

CVS: I think I have heard that but I must now go very deep in my memory. It does not sound strange to me when you tell this, you know, but I never gave later on any more thought to it. And then the (*indecipherable*) conduct, you know, perfectly well this was the effect of radiocarbon on the rate of carbon dioxide utilisation during photosynthesis. I started this work but you and Ozzie have made a good job out of it, you know, because you have made new experiments and so on and I am very grateful...

VM: Well, you really didn't have enough time to finish that.

CVS: Because I was already...You may say the first month more or less I had to find my way in the laboratory and then work on this first problem and we could label it. And, of course, if you would make enough chromatograms and get out all the spots, you know, AMP and ATP and eventually hydrolyse ATP or AMP and so on, then you would have had enough of it. If I may say something, I believe the idea was also that the AMP could be an acceptor of CO_2. Remember that?

VM: I don't but there were so many ideas...

CVS: There was once upon a time, you know, but again, you see, this was a long time ago, I'm not sure... But anyway I always considered that as the training course. Then the

second one we have been able to do something about it and then the third was the Boichenko study. You know that and you have done a very good job and I was happy that something came out of it. We found already that it was not much of an effect. You remember that one day we thought also that the pipettes contained still some chromic acid and that the bicarbonate was split and, in fact, released CO_2 before it got to the algae, before we pumped it into the suspension, OK? And remember that I was doing these experiments and I had also the films in my hand with rather high concentrations...I mean high specific activities of P^{32} in little tubing that we put into the algae. These are the experiments that I was doing and so on and so on and then later on you have with Ozzie done a wonderful job and...

VM: But, not wonderful; we finished it.

CVS: Ja, I mean but I am grateful to you so a paper came out of it and I think that is the paper, *Biochimica Biophysica Acta.*

VM: Yes.

CVS: Vol. 28, page 587 to page 591 in 1958. And this is the paper: "The Effect of Radiocarbon on the Rate of Carbon Dioxide Utilisation During Photosynthesis," and the authors are Ozzie Holm-Hansen, Vivian Moses (I salute you sir!) and myself and Melvin Calvin.

This actually was then the end of the story because I think it was in July that I left Berkeley and then I travelled still through the United States. I think I came home...was it August or something?...because I went to see Alexander Hollander in Tennessee in Oak Ridge and I tried to visit, you know, important laboratories. I also went with the compliments of Calvin and Alexander Hollander to see Pomerat at the Rockefeller Foundation but Pomerat was out of the city but somebody, you know, anyway took notice from my request to get some money and later on Pomerat came to visit us in Gent, you know. You know the story how it goes: the man who had spent his last dollars to see Pomerat, you know, well he was not even asked by the chaps in Gent then to meet Pomerat and Pomerat had to ask, you know, "Where is Dr. Van Sumere, I would like to see him," and then I was called. You know how it is. And in the papers, of course, other fellows got the credit for the money we got from Rockefeller.

VM: You got money from Rockefeller?

CVS: Ja, we got something like around $20,000...no, not so much...between $10,000 and $20,000 but I have never known exactly... there was equipment bought with it and so on? The strange thing is I never used that equipment. So I do still other things now for science without getting profit out of it, you know.

VM: To take you back 40 years: I remember that when you were in Berkeley your first son was born...

CVS: That's right.

VM: And there was a party.

CVS: Ja. There is also something in my mind on that party. That's the party that Ann Hughes gave, you know, organised, with the people from the lab. Because I have always been very grateful to Ann Hughes. Ann Hughes washed once a pillow of me, you know, and cooked a meal and took me to a concert and because sometimes I was lonely although I had many trips in beautiful California with the Simons and Chauzy (*spelling?*) Beauvais: he was a guy who worked with Arnon. And he was from Luxembourg and his wife was French and so on. And with were other people. The Metzners sometimes went also along — and you might have also. And we have been together to Yosemite. You know it was a whole family and Dick Lemmon was my ski teacher on my 28th birthday; I shall not forget it.

VM: Do you still ski?

CVS: No. The point is first of all I had very little time doing all this sort of thing and, well, you know, I have now left actually the subject. You were asking me...

VM: The party. What do you remember about the party?

CVS: Well, I remember the party and something very special. I was very casually dressed that evening so that two Englishmen and their ladies whom I knew very well — those Englishmen were Professor Vivian Moses and Sheila Moses and Professor Bob Rabin and Sheila Rabin — nicely dressed in smoking (*jackets*) and beautiful dresses the ladies and I, myself, just like a dock worker, or something like that. But anyway, this was a marvellous party.

VM: Have you not remembered Ozzie?

CVS: Oh, yes.

VM: Ozzie came in a white...

CVS: Oh, in a white...

VM: With a red cummerbund.

CVS: Right. I should not forget that. Yes, he was in a white smoking — he was really dandy. And I still remember that they had made a sort of crown, you know, with CO_2 and I think it was strawberries that were in it — a frozen crown, you know, and they dropped it in the punch bowl and it all started foaming and bubbling and smoking, you know; I remember that. It was a fantastic party and a great surprise to me.

VM: It just occurs to me: there was an interesting comment on the dress. I don't know where Ozzie got his dinner jacket from ...

SM: He had one.

VM: He had one. But Bob Rabin and I, not knowing American cultural practices, certainly not in California, naturally took our dinner jackets with us to America and this was the only occasion on which we had...we were able to wear them.

CVS: Claudine said "but he had it also also", you know, and I had been wearing it a couple of times in Saskatoon but then we cut it out and in California nobody has seen me with my dinner dress. But I found it a fantastic bunch of people, you know, and there are friends you can never forget. The funny thing is that, you, Vivian, told me always, "oh, those bumpy roads in Belgium" You were the only, in fact, who understood a few words in Dutch.

VM: Yes, well, I still understand a few words; it hasn't grown very much, a little perhaps, not too much.

CVS: And incidentally, you might recall that the bench part I had in Berkeley was the one from Nel van der Meulen who left the day when I entered so it was a Dutch colony all the time because...

VM: And you will be pleased to hear that we saw Nel van der Meulen on Thursday night...

CVS: Is that right?

VM: In Delft.

CVS: I have only seen and met Nel; we have been talking five minutes together, you know, in '57 and then I say, OK this was Dutch property, you know, Dutch people's property, and I will keep it again. But never met Nel any more.

VM: We can talk later about what she is doing.

Obviously you had, although you might have been lonely on some occasions, you clearly enjoyed yourself both in terms of work and social life.

CVS: I must say, this was the thing that kept me going. You might remember that I went with Bob Rabin for the first time through the west, ja? This was a very nice trip and I was very nervous at that time because of Claudine and Chris coming and I should also not forget Ingrid (*Fogelström*-)Fineman. Ingrid used to live with her husband in the same building as myself but then he left a bit earlier and Ingrid cooked once in a while some soup for me. It happened that we went together to San Francisco for a meal and I believe also with you probably to Chinatown and Utz Blass.

VM: Very possibly.

CVS: This brings me a story to my mind. Utz took us — it might have been with Ingrid and with Mel Look, I do not know exactly anymore — but he took us to ...

SM: It was with Mel.

VM: With Mel and Marie.

CVS: Ah. We went to Chinatown with different people once in a while and it was very cheap meal but a very good meal. We paid $1 apiece and if we were with four people we got four different plates and if we were eight people we got eight different plates so there was always enough to eat. But one day Utz took us with his car, you know, to Chinatown and when we had finished our meal, you see, he realised he had left his keys in his car so he had to play kid, you know, like a burglar, and some of the people in the street didn't like that and were going to report to the police. As far as I remember (maybe I am imagining now too much) but we had to tell them, you know, that this is his car and the keys are there, etc. etc. And you know to open his car: he put a towel around his fist and knocked out one of the windows so I think he was a bit hurt also. There are all these stories, ja, you might have heard them already.

VM: Not that one and we saw Utz two weeks ago ...

CVS Ah, my God...

VM: But he didn't tell us that story.

CVS: It is a long time that I met Utz, yes.

VM: Many people we have talked to have been very impressed with the building, with ORL. What did you think of ORL as a place to work?

CVS: You mean the old building or the new one?

VM: No, the old one.

CVS: Well I think, you know, this was a very fine solution in this sense I suggested it also in Belgium. What is important is the equipment inside the building and the brains that are inside the building, you know? We went always the other way and probably because the reason for it is that the climate is not permitting like in California. We always put up, you know, a sturdy building that costs a lot of money and then, of course, we run sometimes out of money before buying the necessary equipment. After the war, now it has improved, but after the war you must understand, you know, we had to rebuild a lot of places. The country was destroyed, you know. Many cities were really destroyed. Also after the Battle of the Bulge and so on — and bombardments. So you must understand that we were not that rich, especially when I started.

VM: So you were impressed with the equipment in the building?

CVS: I think so, relatively spoken for that time. Of course later on we had all better equipment — scintillation counters and all that sort of things — but looking back, you know, all we needed was there, wasn't it?

VM: What about the structure of the building — the open laboratories, the lack of walls. Do you think that was a good thing?

CVS: Well, I will tell you something. I have used a bit the same principle in my own laboratory so I could walk, you know, from one — the left side: do you remember...the left-hand side, Claudine? — we could walk from the one to the end. It was a long...Oh, we can pass it, you know. It is a very tall building and I had the 7th floor and a colony on the 8th floor, and one side you could walk through from the beginning almost to the end with the exception of two or three rooms. So I thought that this, in fact, was not too bad an idea because it improved the communication and the speed, you know, with which you could switch around certain equipment. Would you agree on that?

VM: Indeed. And of course we used to meet all the time...

CVS: Around the table.

VM: ...around the table and compare results and so on.

CVS: We had this also and there are photographs when Calvin came and he got this honorary degree in Gent (1970) and he spent here with his wife, you know, a week, eh Claudine?

ClVS: Yes

CVS: And I forgot to look for this photograph, but there he is sitting with us around the table, although it is not such a famous table like in California where we were having tea around the table, where the prototype of the cyclotron, the first cyclotron, was standing on, right? Is my memory correct?

VM: Correct. But later on you went back to Berkeley and you saw the round building.

CVS: Yes.

VM: What did you think of the round building, bearing in mind that the old one had to be destroyed in order to make a new Chemistry Building? What do you think of it as a way of trying to recapture the atmosphere?

CVS: Yes, I think it was a good idea although, you know, I missed the cosiness of the old building. And of course, everything was...well, actually I am not going to say that I was a pioneer in the field but anyway I was with the pioneers and I thought it was a very pleasant time actually. I am not sure it had still the same spirit later on.

VM: Well, I think it is difficult to keep something going for a very long period, particularly when it gets very big, as it became later.

CVS: Because one day...you see I have been back in Berkeley, as far as I can recollect, in ’64, ’76 and then I went with about 45 people, Belgians, to the lab., you know —

people from all walks of life. There were politicians, high judges and everything, university professors and I wanted to tell them and show them, look, this is the way the Americans do it and there history has been made, you know, especially in the fields of nuclear sciences. They were very impressed, eh Claudine? And we had a meal in the evening, ah, well, I think Dick Lemmon was there with his wife, Marilyn was there, you know, and Martha was there probably and Bennett. We had a meal, they had organised for us in the Mandarin. My friends wanted to have a Chinese dinner, top class. This was fabulous; I'm not going to say how many bottles of wine there have been but it was over fifty, eh Claudine?

VM: Fifty bottles of wine?

CVS: Ja, ja, ja. But the Belgians were in such a mood, you know? And there was also a German lady who had been in the lab., Luise.

VM: Luise Stange.

CVS: Stange, ja.

VM: We saw her...

CVS: My god! You know, I never met her, you see, but you know we called ourselves the Calvinists sometimes and I said, "Come on, Luise, you come with us for a meal" and then they had to drive her, you know, in a hurry to the airfield, because she was leaving that evening. In the same way, and I am thinking he unfortunately died also, was George Akoyunouglou.

VM: Yes, he did die.

CVS: Ja. So we never met in Berkeley but we knew from each and other that we had spent there part of our life, you know. I had a lecture once in Israel and I stopped in Athens and Georgie took care of me and when he came to Gent I took care of him. So it was actually an international organisation; it even worked for those who were not together in Berkeley. And I think this is something that I, for all the gold in the world, would never like to miss.

VM: So it clearly has had an important part to play in your life.

CVS: It has had an enormous...For instance, look at it. I am going to tell you it very briefly. First of all, you know, we got some money via the Rockefeller, via Berkeley, via Alexander Hollander, who was also extremely nice to me in Tennessee. And then next to that I taught, for instance, for scores of years a course in radiobiochemistry. I would never have done that. Of course I had been working with isotopes in Canada but I would never have done it, you know, if I had not had the further experience in Berkeley and then the book from Calvin and, you know, all that sort of things and the contacts with other people. I went also to Munich for the gas phase determination of isotopes with Helmut Simon and so on, and also to Saclay. But I think that Berkeley, actually for my "tracer life", this was the most important.

VM: Of course you were much younger then, more impressionable and it was an important time to learn things.

CVS: Oh, I think so. And you know also, what I liked very much and I saw the same spirit with Dick Synge later on; I don't know...Dick Synge was a very great friend of mine. This was the humility of these people, from these Nobel Prize winners. And actually Calvin also...I might remind you again: "you might lose in the beginning but later on you will win a couple of battles when discussing with me". This was something that you would not directly expect, you know, from this kind of person. So this humility in science and I have also tried to foster that also in my people, you know. Then, of course, the contacts, you see, when I was teaching photosynthesis (I also gave a course in photosynthesis); I got the most recent chromatograms from Berkeley. When I went there, you know, Martha made them for me, improvements and so on, you know, so I could show them.

VM: So you kept in contact with really quite a lot of people one way or another over the years.

CVS: Oh, ja. Who has been? I think Ed Bennett has been several times in Gent; Martha has been in Gent; Calvin, of course. Then you, Bob Rabin, Bob Rabin has been here in this house also and Helmut Simon, who also was there, you know?. Janet, the girl from Australia — she wrote me once when there was a congress in Brussels on photosynthesis but I forgot her name...

SM: Anderson.

CVS: Anderson, that's it.

VM: We are in touch with her and we may see her. She is in Australia but she comes to Europe...

CVS: Please give her my regards. When flying over Australia — we went to New Zealand, you know, for a cruise and so on in January and February — when flying over Australia I thought, where is she now?

VM: In Canberra.

CVS: In Canberra. Because through Dick Synge I was once upon a time also an external professor — well you can't say the words "external professor", it is too far fetched — but at least I was in permission of Ph.D., you know...

VM: External examiner?

CVS: External examiner, that's the one I wanted. And this was Dick Synge and it was more or less...was on the basis of that.

VM: Where was he?

CVS: Dick was in Norwich; when he started, of course, his work in Aberdeen.

VM: Oh, this is Martin and Synge!

CVS: Ja, sure. Dick, oh, we were very good friends. This came very strange. Once upon a time I published a paper in *Phytochemistry* on proteins that contain phenolics and so on and this is the reason why Abro (*spelling?*) and I have also published this book, you know — edited it, of course. Dick was interested in that and wrote me a letter and said, "you know, that if you allow me one day in your laboratory I will come to your meeting in Gent". Oh, this can't be Synge, you know, who asked to stay one day with me in the laboratory. So I asked Helga please check that name and she said, "Professor, he is the Nobel Prize winner." So we actually became very good friends, eh Claudine?, and we have been travelling to Britain and travelling here in Europe together, you know. He was maybe in many ways the opposite from what I am...

VM: When you came back from Berkeley, in '57 I guess it was, did you have a job already in Gent waiting for you?

CVS: Yes, more or less: they did not want to let me go and I got something from the Patrimonium from the University but not really an appointment so I made very little money in the beginning. And then I could tell you stories on that so Claudine kept me going by our pharmacy. And then in 1961 I became an Associate Professor. In the beginning I had to start from scratch: with two desiccators I made paper chromatography. And I had to start from scratch.

In 1959 I got some money for buying the first tracer equipment and slowly but surely I have been building everything up. And in 1965 I became a full Professor and then I taught biochemistry and enzymology but, mind you, I was already teaching at the University from 1958, January 1958. My boss, you know, became the Chairman of the Scientific Committee in Belgium so he was many times in Brussels and I gave his lectures and these lectures I have given from '58 up to 1993, you know.

VM: You retired in '93?

CVS: Ja, 1993. Actually, the last year I did not lecture too much anymore because I was busy with as head of department and all the changes that took place and so on.

VM: So really the whole of your life, from the time you came back from Berkeley, has been based in Gent?

CVS: Based in Gent. But as I said with NATO grants I went to Munich, I went to Paris. I was at a certain moment involved with the Phytochemical Society (*indecipherable*) in England and then later on I became the Vice Chairman, Chairman of the Phytochemical Society of Europe. This may be a strange thing to you — I was the first non-British.

VM: Were you?

CVS: Yes. So more or less they accepted me. And it was during the week that I was staying with Dick Synge in Norwich to finish a paper that they elected me in London so I did not manipulate anything for that. I have been mainly involved in phenolics, the biochemistry of phenolics. I have written maybe, together with the people working with me, three papers on algae. You know, 1 on the photophosphorylation and the uncoupling and so on but not too much because I thought you can't compete with the big shots, you know! You can't do that. So I had this problem already going from before Canada in Gent and then Canada, you know, the phenolics and so on and there, of course, I have been very active. And as you see this is also phenolics and later on, you know, this is again, you see.

VM: These are books that you...

CVS: Ja, and the one with Tony Swain and Jeffrey Arbon that has been published in *Plenum* but was not well looked after. Tony had an accident and something went wrong there. And, of course, what we did, and this is the reason we won several prizes in Belgium — they asked me one day to develop a technique for the protection of our Azarea (*spelling?*) cultivars which bring a lot of money to Belgium and to this region and we produced something like, you know, I dare not say it for the moment, but anyway 90% of what we produce in Azarea is a lot — millions and millions of pot plants — it is not too far from a hundred million, I think. This brings millions of Belgian francs to Belgium and the competition is very hard with the United States. This is, of course, because they have their own territory but from Germany, the Netherlands, France.... And so we have very beautiful cultivars and, you know, we make new ones by cobalt irradiation — cobalt-60. It is very strange that I...

VM: And who is the expert on cobalt-60?

CVS: Ja, but I did not do that anyway. You know, their own expertise was built up here in Belgium but I understood it very well. But they asked me to Brussels and said, "Listen, we must be able to patent the plants but what happens. We have put a lot of money into the production of new cultivars, new colour varieties and then we see that they are produced *en masse* in other countries and this is something that we can't keep going because we are investing our money and the others get the benefit". So what I did was, and this has been improved later on a lot, you know, was making fingerprints. This is the beginning only; we have much (*indecipherable*)...much nicer fingerprints from all the phenolics. Then we translated that by a computer programme into an electronic pattern. And here you will see, for instance, *niobe* is a white one and the unknown (*indecipherable*). So you can say, hey, hey, you took that, and we have done that for 600 about ...

VM: Ah, so this is a way of fingerprinting your flowers in order to protect your rights on those flowers.

CVS: Yes, you see, so the fingerprint is converted into what we call an electronic passport.

VM: Yes. And it's based on an HPLC analysis of the flavenoids?

CVS: Sure, yes. We have them for about, oh, I can get them rapidly upstairs, for about...don't call me a liar when I say around 600 or 570 or something like that, you know. Now, this one is the prize for the best agricultural research. This is a 5-yearly prize so every five years they give it in Belgium. And this is...

Tape turned over

So for the period 1982-1984, for the five years, we won the prize, the Müllee (*spelling?*) Prize as we call it, for the best agricultural research because this is also considered, of course, horticulture. And we did the same thing for hops so we can now identify even hops even when the cones are ground, you know. People thought they are never going to be able to do it. Now we made fingerprints and we could nicely see when it was a (*indecipherable*) and when it was a Brewer's Gold, which is much cheaper.

VM: And this is also based on flavenoid derivatives?

CVS: Ja, the flavenoids, those that are mainly (*indecipherable*) derivatives on which we were basing ourselves and so forth and the camphor derivatives etc., etc., not phenolics. Because this was so valuable, you know, the (*indecipherable*) said we are going to kill him and the brewers said we will erect monuments to him and I said you better send the cheque to my wife! Then I got in 19.., oh, when was it again, in 1986, no 1988 it was, I got the 2-yearly prize from the Brewing Convention, the Belgium Brewing Convention, and then also the I won the van der Stricht (*spelling?*) Prize for that. So we have done it for roses now. Of course, it is very important. The French were also very interested in that, I can tell you stories about it. So I have done a bit of everything but all in the field of phenolics.

VM: Well, that's until you...and you retired in '93 when you were 64 years old, you said?

CVS: Yes, 64.9. And I should tell you, you know, the story which is maybe very important. That is in 1983 the Belgian flaxers came to see me and said they needed a very quick retting system because we are losing our grip, you know. Can you? And I said, "Well, I have never had a flax plant in my own hands, you know, and you ask me something. Let me think for 24 hours." So I did that and then I developed an enzymatic retting technique and instead of retting in the pits, you know, with hot water for — depending on the quality of the flax and the change from year to year: the photosynthesis and the climate and all that sort of thing — but let's say from five to six days...seven days sometimes and even more...but around five to six days and it costs energy and so on. We do it in sixteen hours. Mainly they use a classic field (?) retting, you know, dew (?) retting also. This takes about plus/minus seven weeks. So we do it in sixteen hours and I get it out as white as that if necessary. So what happens is that Novo...the story goes it is very strange. The newspapers came to my lab. when I got this first prize, you know, the Agricultural Five-year Müllee (*spelling?*) Prize, and I made a newspaper article and the guy who was making the pictures said, "Flax, Flanders flax!" So this came in this newspaper and the scouts from Novo Nordisk read it and said, "Well, we are also interested in developing

enzymes and so on. Could we collaborate? This is what you need and this is what we did." then, of course, Novo said that people all over the world would know that I was following and you have an advance in all this and if you agree we are going to patent it. And this is what I did and this is from Novo Nordisk. There is a black spot and they wrote on this paper. And, of course, because it had to be desalted. This is, you see, something that I had by accident. So many things we finish here because people came to ask me.

VM: Sure, that's the nice way.

CVS: And this was, again, on the basis of several splitting enzymes as what I told you earlier, my Ph.D. and Canada and then I left it more or less and at the end they brought me back to it.

VM: Full circle. Just to finish, but very briefly, since you retired from the University I understand you have a new career...

CVS: That's right.

VM: ...in public service, political activity?

CVS: Political activity — actually the Flemish Liberal Party. The ex-Vice Prime Minister of Belgium, Giverofstaat (*spelling?*), who was the Chairman of the Party then, invited me to join the Party and to play, still, if possible a role. Of course, you do not start a political career any more unless you are Adenauer or Churchill or Reagan, maybe, at the age of 65. So I said well I can do still a job maybe locally, so they suggested that for me the province was actually like a senate, you know, where people speak in a soft way, nicely and respectfully to each other. So I am doing that and there I fight for science.

VM: Are you a Senator?

CVS: No, no, a Provincial Councillor. I represent, actually, 17,000 people plus/minus.

VM: And you fight for science?

CVS: I fight for science. And I got already twice a subsidy for the University. And now this time I hope, and I think people are getting convinced now, it will be a more substantial investment because I give them all this proof — you know, look what happens. For instance, when you look at the gross national product, Japan has invested 2.7% in science, America 2.5, Europe as a whole 1.9, we in Flanders 1.85 so we are just at the middle of that of Europe but still under — we must, you know. So that is what I am doing, mainly. Other things as well.

VM: Good. So that has taken us a long way from Calvin but it has been very nice to meet you again and to hear your memories of those good old days.

CVS: Yes; I thank you very much and I am so happy that you are here, you can't imagine.

VM: We are equally happy.