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## Professor Sir Keith Sykes in interview with Lady Wendy Ball Oxford, 4 March 1997

WB Professor Sykes, could we start with some biographical details? Could you tell me where you were born, and when?

KS Yes, I was born at Cleveland, in Somerset in 1925 at my grandparents' house. They had moved to that area, and my parents at that time were living in Exeter. So it was one of these births at home with the local GP and the nurse who came down and stayed with the mother for three weeks before the birth.

- WB And it all went well?
- KS Fortunately, it all went well!
- WB And you have a younger sister, or you had a younger sister?
- KS Yes, she was born five years later in the same place.
- WB Yes. And your parents were from Yorkshire originally?

KS Yes. They were, well not childhood sweethearts, but they got to know each other when my father was about seventeen. They lived in neighbouring towns, Sowerby Bridge and Hebden Bridge, which are just to the east of the Pennines – they are about six miles apart. And they met while my father was the organist at the chapel in Hebden Bridge where my mother lived. And he used to be taken back for lunch by my grandfather on my mother's side because he used to have to walk to and from Sowerby Bridge and Hebden Bridge every Sunday. So they took pity on him, and took him out on the Sunday walks and back for high tea and that's how the romance blossomed, I think.

WB So that was very early on, but was he working at the time or was he at school?

KS He was a student at the time. Yes, he had been in the Navy. He went into the Navy at the age of seventeen in 1917, served on a battleship, shot down a Zeppelin, but also shot the top off Cleethorpes church tower because they had some new mathematical sights. So he didn't have a very distinguished war. I think he spent most of the time up in the gun turrets learning French, with a view to going on to University because he had worked in a bank since the age of fifteen. And then he came back and got a postgraduate, got a post-war gratuity and went to Leeds.

WB To read what?

KS Well, hopefully he was going to read modern languages, but the faculty was full and so he went into the economics faculty and he did a BA in economics there.

And then in 1922/3, the year he got married, he went to Manchester and did an M.Com under TS Ashton, who is a very well known economic historian, working mainly at that time on the amalgamation movement in English banking. And by the time he was 28 he had produced four books on banking. So he was one of that generation of post-war people who, you know, valued university life and worked jolly hard.

WB So there is no medical background in your life?

KS None at all. No.

WB No. And you went to school mostly in Plymouth, and then later in Halifax, I believe.

KS Yes, my father moved, he was appointed as an assistant lecturer at University College, as it then was, in Exeter in 1925. And he was soon made a full lecturer and then dean of the faculty of economics, and in 1929 he was appointed managing editor of *The Bank* so we moved to London briefly. I don't know whether he had a row with Brendan Bracken or what, but anyhow they didn't last very long in London, I don't think they liked it very much. And he was then appointed warden of Astor Hall in Plymouth to run simultaneously with his extra appointment, the idea being that they would try to create a federal university college in the Southwest. And Lady Astor had given this money for a hall of residence, so we spent the next four years there while he did some work on a Leverhulme research fellowship, and I went to Plymouth College junior school. Commuted there by tram and on a small bike with eighteeninch wheels, four miles, I mean, through the middle of Plymouth. So, you know, there was no traffic in those days. It was a little blue bike. I remember the policeman when I crossed Pennicombe Quick(?) saying 'Come on bluebird,' because Malcolm Campbell at that time was going for the record.

WB Yes, yes. And what were you most interested in at school?

KS Oh, I don't think anything. I was a complete dunce. I couldn't remember anything and I don't remember doing anything at Plymouth College at all, other than frightening the teacher once or twice. We had, still, ladies who taught us in Victorian dress with the black choker, I remember, and I mean that was just a prep school. And I remember being quite unable even to remember the little poem 'Under a toadstool stood a wee elf', and I still can't go any further than that!

WB Well, you must have acquired some memory later on to have achieved what you have achieved. Was there any point in your school career where you became interested in medicine?

KS No. I think I had... When I went back to Exeter in 1934 I went to a secondary school - I was terrified of most of the masters, I was nearly always towards the bottom of the class - I liked biology. And I had quite a lot of illness at that time. I had had a lot of problems with pneumonia and various childhood illnesses, and then I had an operation for an appendix abscess and I think that probably confirmed my desire to go into medicine, it was about 1938. But ... [I] had never contemplated the

academic work that would be necessary to get into medicine, it was just a grand idea that I would rather like to be the, like the nice GP who looked after me.

WB And, so what did you do for the school higher certificate?

KS Well, after Exeter my father was moved on to war service in the, first of all National Savings movement, and then Board of Trade and then Ministry of Labour. So he moved to London and we moved to Ashstead, and I moved then to public school, a minor public school, St. John's at Leatherhead which seemed to be full of very bullying-type clergymen's' sons. They had all done Latin and I was very poor at Latin so the three months I had there were a pretty unhappy time. And then during the blitz, in the summer, we had a few clusters of bombs near us and the house was partially demolished. So we were moved up to Yorkshire, to my father's brother who was a butcher in Sowerby Bridge and while we were up there my father decided that the blitz was on, there was no point us going back. So I then went to Heath Grammar School, and really enjoyed it. I mean I had a headmaster that I could talk to, masters who were very considerate and the Yorkshire boys were very good in accepting, you know, a southerner. And I really enjoyed that kind of teaching and I did quite, reasonably well in the school certificate, got my credits that I needed for university entrance and then went into the science sixth. I had a lovely teacher there, a chap called AD Phoenix(?) who was very considerate. And I branched out and ran, I remember I started a joint debating society with the local girls' school, and unfortunately didn't bother to learn up the ritual that one had to do to analyse one's salt and to do one's volumetric analysis in the A-Level. And so I got a nought in practical chemistry, failed my higher school certificate, and since I was then no longer, would no longer be in a reserved occupation I went off and joined the army. And my father came back and was very horrified, and found out that I could go on and do an inter-BSc(?) at University College London, repeat the physics, chemistry and so forth that one needed. And he managed to get me off the army by saying that I had signed up under-age. And so I went off to University College London which was evacuated to Bangor, repeated the chemistry, physics, botany and zoology and had a really very fulfilling year there, with a lot of music and games and...

WB The music was inherited from your father, you were playing something?

KS Well, he was a very good organist and he, and choirmaster, and singer indeed. My mother played piano but I was never very good at music. I played the violin in the school orchestra, I did eventually play in the Cambridge orchestra, but I was always one of those chaps whose G-string broke halfway through the pause in Beethoven's Eighth, or something like that, or I fell of the platform! So I'm afraid I was never very good.

WB But you had some very interesting contemporaries in Bangor, I believe.

KS Well, yes. It was a wonderful place to be because you had the science faculty of University College there and people like GP Brown(?), who was a mathematician, then HG Wells' son, GP Wells was there. And I was actually put into lodgings with him, because our landlady, her husband was taken ill, and in our summer term I lodged with a widow of a French professor and GP Wells. And he was the most extraordinary character. He was a marvellous ballroom dancer. He used to have two

earthworms called Horace and Horatio with which he was doing some research, and he used to trundle off to the Menai Straits and fill the great sweet jars with seawater, I remember. And then, on a Sunday morning, he used to disappear downstairs and take our shoes down to be cleaned. And I always thought that this was rather strange until after a couple of weekends I realised that he also kept his cellar down there. So he used to have a bottle or two in the morning and arrive in a very happy mood for Sunday lunch, together with all the household shoes cleaned. So that was the acquaintance with him. But it was a wonderful place to be because the ministerial students were full of music; they sang every lunchtime in perfect harmony. I learnt a lot of Welsh songs and we had a great singsong every Saturday at twelve o'clock until one when we sang all the student songs, with rather ruder words than are in the Scottish student songbook! We had a resident trio that played, and all these social activities were accomplished on ten shillings a week, which included one fourpence ha'penny in the doubles seats at the back of the local cinema!

WB Which you took a full advantage of!

KS Yes, that's right, yes! My girlfriend played the cello and that was a little bit difficult on Bangor Mountain in the evenings, but...

WB You took it up a mountain?

KS Well, we tended to go home from orchestra across Bangor Mountain, but it was quite a nice place to be, very romantic.

WB Very romantic at night with a cello! Yes, wonderful. And then, after that, what was your next move? You went back to UCL?

KS Well I, I managed to pass the exam then, and so then I was going to go on to University College which I think was still in, in London. But my father decided I ought to go to one of the old Universities. The trouble was that I hadn't done Latin in my school certificate so I hadn't got the exemption from that. So he sent me to a private tutor who was an excellent man, a Bradford Grammar School teacher, who taught me to enjoy Pliny in the five weeks I had with him. And I went down to Oxford, to Exeter College, very impressed by the romantic nature of the place, took the exam and failed the Latin. So I phoned up my father and said 'Well, I am off to London tomorrow morning' and he said 'No, don't do that, I have discovered that Cambridge allow you a dictionary.' He said 'Go and buy yourself the biggest dictionary you can and go to Magdalene in Cambridge, take the exam.' When I went there I had to translate an even smaller bit which, with the aid of this enormous dictionary, I managed to do. So I was taken on at Cambridge and started the next day.

WB That's splendid. The next day?

KS Well, the responses was taken just before the beginning of term.

WB So what were you reading in Cambridge?

KS Well in Cambridge I did the Natural Sciences Tripos but it was truncated from three years down to two. And, again, I mean there were only forty-five of us in the

college in the first year, there were ninety in the second and a lot of those were people who had been invalided out of the forces. So we few people who were in reserved occupations and were reasonably fit had to do all the sport for the college. So I, I mean I rode, I played rugger, I played tiddlywinks, you name it. I didn't get on very well with the anatomy because I couldn't remember, again, all these, these terms. So at the end I got a third in my degree and because I had failed the anatomy I had to stop off in the long vacation and do an anatomy extra exam. So I passed that and then I went on to University College Hospital in 1946, and after that didn't have much [of a] problem because I was studying something I was interested in.

WB What, what made the difference to your being interested at that stage?

KS Oh, I think the patients, the, the clinical ones. One suddenly went into the wards, and although again I was a very poor student, I mean again I produced the student shows and played in orchestras and things like this, there is no doubt about it that the patient care aspect grips you. And even though the kind of teaching we got in those days was pretty appalling, I mean I had never looked at an original paper, I had never looked at an original paper until about in the middle of my anaesthetic training... It seems remarkable to think that one just had to imbibe the whole thing and get it all from very outdated textbooks.

WB And the only teaching you got was on the wards, from the consultants? You got no...

KS Yes, we had lectures. No, we had a course of lectures, usually at nine o'clock in the morning and at four o'clock in the afternoon and then you spent ten to twelve and two to four on the wards attending ward rounds. There were some good scientific teachers. There was Harry Himsworth, professor of medicine, Max Rosenheim his assistant, Eric Pochin<sup>1</sup> who was a radio... leader in the field of radioisotopes. But on the whole the consultant staff were pretty what I would call Harley Street orientated. They were pompous, you streamed around the wards after them, and they taught very ancient medicine. I mean I, the sort of thing you got taught was the way you treated constipation was by rolling a ball of lead-shot around the abdomen in the direction of peristalsis.

WB Really?

KS And of course medicine itself had not developed. I mean we hadn't got penicillin, there was practically nothing you could do to, to treat people. If you had someone in heart failure and they were dying you gave them an injection of Coramine, which was a stimulant. You had a few drugs like digitalis and so forth but there really was very little that one could do for the patient.

WB It seems extraordinary that penicillin wasn't available, since it had been discovered.

KS No, well that didn't come in until the end of the war, you see. So we had sulphonamides, but... You know, for example today the ulcer treatment is so

<sup>&</sup>lt;sup>1</sup> Sir Edward Eric Pochin CBE

different. Then one had ... one transferred patients from a milk diet onto a gastric one, onto a gastric two, onto a gastric three diet. You couldn't ever cure them, and you had huge clinics for people coming up with ulcers and so forth. And nowadays of course ulcers are treated with the blockers and so forth. So medicine, although we had a lot of patients to look after and we never got time off - I mean I had four hours out of the hospital in the six months I was a houseman – you still didn't have the complexity of treatment that you have today. You didn't have too many lab results, there was nothing very much you could do. You could put up intravenous infusions but that was a major undertaking and only done if you really had to. So it was a very much simpler type of medicine.

WB How were you aware as a very young student that all these treatments were so very out of date? How did you pick that up?

KS I don't think I particularly *was* aware of this, this was the current teaching at the time. I was aware of the pomposity of the Harley Street consultant and the way in which they used to arrive in their Rolls Royces and the houseman had to go and open the door, and I was brought up in that sort of era. We certainly poked a lot of fun at it because I remember that my two closest friends, one, a chap called Robin Higgins who was a son of a neurological surgeon at Great Ormond Street and the other, Harold Lambert, they both used to take the... Whenever they could, get behind the consultant who was giving the talk around the patient and then make curious signs at me to try and get me to laugh. And one of them actually stuck a cigarette butt up my stethoscope at the beginning of the course, and I always wondered why I could never hear heart murmurs! And he didn't tell me at the end, until the end that he had done it, and in fact the first time I thought I'd ever heard a heart murmur was when I was taking my final exams and I heard this rasping noise from my stethoscope. It actually turned out to be a plumber who was filing a drainpipe nearby and I thought this was the machinery murmur of the heart defects! So I was a pretty ineffectual student, I enjoyed it.

WB You obviously had a wonderful time. And I think you produced reviews that Jonathan Miller went on to produce later, I mean they were in that vein.

KS Yes, he came later. We felt we prepared the way for him.

WB Yes, quite. So, very fine...

KS Very high class reviews actually. You know, I mean we took off TS Eliot and people like that, it wasn't the usual kind of thing!

WB You obviously led a very all round life, and were you becoming interested in anaesthesia at this point?

KS I think I was, because I know when I went into the army I did ask to train as an anaesthetist so I think I was probably interested in it. But I would know very little about it. I mean I might have given a few anaesthetics as a student, we did all have to go and use the open-drop ether on the baby circumcisions, but I don't remember very much more about it at that stage.

# WB So you then were offered a job at the Norwich and Norfolk Hospital?

Yes, I did a house physician job with  $Hawksley^2$  at UCH. That was mainly KS gastroenterological work and then I had been offered a job by, with Gardham<sup>3</sup>, who was the head surgeon. But my friend Harold Lambert who is always clued up on these things, he said 'Well you know the Health Service has just come in, and they pay you to go to interviews, and there is a nice job here at the Norfolk and Norwich. Why don't you go up there?' So I took the train, went to the Norfolk and Norwich, and I was the only applicant for this job and I said 'Well I'm, thank you very much' when they offered it me, 'but I've got this one at UCH.' And they said 'Well stop on, have lunch.' So I went to lunch and the mess of doctors, there were twelve of us in the mess, mainly ex-service people, a chap, one chap had been a Chindit and so forth. Very elegant lot of, of post-war doctors, and the food was unbelievable. I mean there were two joints and beautiful cauliflower cheese and two maids serving. And after this fantastic lunch we sat back, and I remember one of these chaps offering me black Russian cigarettes after lunch and a copy of *The Times*, and then the house governor came in and said 'Well, I am sorry that you aren't going to stay with us.' And of course I changed my mind and went to the Norfolk and Norwich. Which was a marvellous experience because it was a very busy hospital, a very high standard of clinical care...

WB More advanced than UCH?

KS I would say much more practical. I mean we, at UCH we didn't really see many sick patients, it was the beginning of the rundown in London hospitals. At Norfolk and Norwich chaps would stagger in after days of harvesting and they would have peritonitis and one thing and another, they would <u>ride</u> into hospital, I mean they were immensely tough. And so you saw an enormous amount of very, very sick patients. I had to look after a hundred, a ward of 120 patients, which was a huge number to clerk. Fortunately the registrar who was above me helped a lot and he took, he took over all the neurological cases. So I worked with two consultants. And one was, started operating three nights or four nights a week depending on which team was on at seven o'clock and you went on until two or three in the morning. But at midnight they served you bacon and eggs or whatever it was, and I went from 9 stone 10 to 13 stone 5 or something while I was there! So although it was immensely hard it was a wonderful experience.

## WB What were you learning mostly?

KS Well this was all surgery, it was various kinds of surgery, you learnt about post-operative care and that sort of thing. But again, of course it was a pretty primitive type of surgery. But they did have very good anaesthetists there and I remember being very impressed with the way in which these chaps could give anaesthetics. And I was very impressed with the surgeon with whom I worked who was an academic surgeon trained at Bart's, and he was, did these huge oesophagus operations which used to start at two o'clock in the afternoon and go on until seven o'clock. But I think he was the first person that made me think that there was more to science than this. One has to remember that there were no libraries or no facilities for

<sup>&</sup>lt;sup>2</sup> John Callis Hawksley CBE.

<sup>&</sup>lt;sup>3</sup> Arthur John Gardham.

learning in any of these places. All that we had in our library were two or three copies of *The Lancet* from 1930. So you couldn't get to meetings, there weren't any lectures and you got no didactic teaching. You just learnt by experience and you learnt from the chaps who were a bit further ahead.

WB So no, no facilities at all for getting to grips, really for getting to grips on a research basis perhaps with subjects you were interested in?

KS Oh, there was nothing like that. No, it was just a very hard but excellent clinical grind. I mean I did something like seventy-five appendices alone there. And at night what used to happen was that the senior surgeon or registrar would be at home, only a mile away. And if you got an appendix in or strangulated hernia or something he would say 'Well do you feel able to cope?' If you said yes you did, and if you got into trouble you would pick up the phone and say 'Hey, come and help.' So it was a, a wonderful way to gain experience and gain confidence, but you know, a lot of funny experiences. I remember one night in casualty being, going down to there and a chap complaining that he had got a buzzing in the ears, you know, this is a well-known psychiatric syndrome. So I said 'Well good, good my man. I'll just have a look.' And I looked down and out flew a fly! You know, that kind of thing happened.

WB Yes. And you didn't have too many disastrous cases? I mean, being still fairly young and inexperienced and being left in these situations...

KS Well I was... I mean, I had one or two frightening moments but there was always help at hand. But again, it was quite a primitive type of medicine. I remember, you know, that one of the main problems after abdominal operations is that the guts don't get working again. And one of the surgeons called Charlie Newman who used to come in with a bowler hat on all the time, his treatment for this was 'Two-penneth of ox bile, Sister.' And Sister had to go down to the butcher and get some ox bile and give an ox bile enema. So it was quite a primitive type of surgery with a mixture between the old fashioned and the new, but it worked. And they were very, very fine clinicians. They saw a huge amount of material and it was a very, very happy and well-run hospital. And still is.

WB And you were having also a nice time sailing and doing a few other...

KS Yes. I didn't have much time for sailing. I did do a bit of sailing there but... One was just on duty, you know, three nights or four nights a week. I got out to the theatre occasionally and that sort of thing. But you were so tired that you just didn't do it. But you were looked after well, the food was magnificent, and these two maids even used to wash your hairbrushes. It was that degree of care. And of course the house governor had lunches with us and so we were well looked after. There were none of these administrative problems and the beautiful telephonist always knew where everyone was. You didn't have a bleeper or anything like that; she just knew where you would be at that time of day. And the pub was on the branch line to the apartments, and so we could always be found!

WB Wonderful! And so National Service unfortunately intervened and you had too...

Yes, I mean I went in the army for two years. It actually, for me it was a very KS good experience. Of course one was very lucky going in as an officer. We went down and did this preliminary training period down at Cookham, and at the time I was there it was run by a psychiatrist who had rather unusual ideas about the degree of freedom that should be allowed. We were drilled by a guards sergeant. You know, 'Pick up your bloody feet sir.' We were pretty hopeless at that. But, we... He, he divided us into little groups and we did a lot of project work which was quite unusual. And I remember our final project was to site a field ambulance and we had had all the theory about how you would have to site it near a river and near communications and that sort of thing. And I said to my little group 'Well, you know, we have got three days to do this. We're near London, there is no point in spending time actually going to look at the site because I can read maps very well, I've been a Boy Scout. So I suggest we, you know, I will find a site for you and we will all go up to town for three days and whoop it up.' Which we did, came back and then we all had to present these things. And as I got up to give our presentation I gave the map reference of this thing and everyone was looking at these maps, and as I went on with the presentation there was a lot of tittering and everyone talking to each other. And finally the colonel said 'Excuse me Lieutenant Sykes, I have just confirmed this map reference.' And I said 'Yes.' And I had got this map, there was a nice green area, it was near the A4 and various things. And he turned out, he said 'Do you realise your field ambulance is sited at the end of the main runway at London Heathrow airport?" Of course he had given us a very, very old map before Heathrow was there! So... But he, he didn't court martial me for that, which he ought to have done, so it was fairly free and easy.

#### WB Light-hearted, yes, yes! And after that, you went straight off to Germany?

WB Yes, we were posted... I wanted to go to a rather nice place like east Africa, but because of my asthma I had to go in temperate climes only, so I was sent to Germany. And we all went to Hannover to begin with, and I remember my service dress was lost so I only had my battle dress. And when I went down to see the ADMS [Assistant Director of Medical Services] who controlled the postings in Düsseldorf, he was there at this desk. And I remember going in and I had my boots on, and having very thin legs as I saluted my boots came together with a really pronounced bang. And this chap woke up and sort of looked and he saw this apparition you see of a National Service officer wearing battle dress. So this rather shattered him because all the other chaps were sloping in in their brothel-creepers and their service dress. And he... 'Why my... What's your, what are your hobbies?' So I said 'Well I ride a bit, I sail a little bit.' 'I have got the very place for you' he said. '22nd Light Ack-Ack at Menden. They have a hunt, you look after the Möhnesee leave centre for sailing, you look after Winterberg leave [centre] for skiing, and three thousand civilians.' So off I was sent to the 22nd Light Ack-Ack which turned out to be a fairly friendly, pretty disorganised sort of regiment. They had all these light ack-ack guns and only about twenty percent of them would ever move when they went on manoeuvres. But I had a medical, a little tiny hospital there of about ten beds, a Sister and some nursing orderlies.

WB Just you and a Sister and some orderlies. Really?

KS Yes, and, and I had a driver and we had to... I didn't do much at these two leave centres, I just used to go and pay them a visit once a week. But it was a nice little trip because we went all the way across to Kassel for the Winterberg leave centre and the Möhnesee dam, and Möhnesee had this marvellous sailing club. So I was able to get my sailing in. And they had repaired the dam by this time. And then the... We rode a bit and they, of course the hounds got distemper. I didn't know what it was, I was called out one day and there were these dogs coughing and spluttering. I gave them some chloramphenicol, which had just come in then, which said it was good for treating whooping cough and they all got better! So my reputation was made and...

WB As a vet as well!

KS And I was made secretary of the horse show! Yes, so...

WB But did you not have a predecessor who at least helped you to begin with?

KS No, one was just stuck into this.

WB Thrown into it.

KS Fortunately there was a hospital nearby, a British medical hospital at Iserlohn. So you, anything sick you could really push off there. And there was a German doctor who helped to look after the German wives if you were out for the evening. But on the whole, you know, one was on call the whole time. And of course there were quite a lot of visits to be paid to civilian people as well.

WB And so you were administering anaesthetics at this time?

KS No, no, this was purely general practice.

WB No? Purely general practice?

KS Yes. And I mean, I was very, well, ill equipped for it, you know. A lot of diseases, skin diseases and this sort of thing. But in those days of course in general practice, again you did not have a training programme. You just went into it and started straight away.

WB And hoped and guessed.

KS Hoped and guessed, that's right.

WB After that you went on to Hamburg?

KS Yes, I had this funny phone call, I was called in on the Möhnesee one day, a boat came out and fetched me in and said 'HQ Rhein Army on the phone, want to speak to you.' And there was this chap said 'You will go to Hamburg tomorrow and train as an anaesthetist.' And it was the only time in my life that I had ever thought quickly and I said to this chap... You see it was the middle of the sailing season and we were actually getting a very good regimental team together and we were due to go and sail in Berlin. So I said to him 'I would rather like to go on manoeuvres with the

regiment.' And there was an absolute dead silence. Again the idea of a National Service officer volunteering to go out on manoeuvres, you see, was really something new. Anyhow they were very impressed by this and said all right, they would send someone else there, and I could stay where I was till October. So I went on manoeuvres. My complete crook who was my right-hand medical orderly had been demoted from sergeant, I think, three times for various nefarious offences, he fixed the jeep so that I didn't have to go open air. And so I set off in the luxury of my little Volkswagen with my driver, with all the gin tucked in the back and was stationed at Headquarters Rhein Army, of the headquarters of this side that I was fighting on up in Münstlagen(?). And they ran out of tonic and the only way to get the tonic was to go through the enemy lines. So again my lance corporal usher was painted rather white, we carried a white flag, and we went through to the NAAFI [Navy, Army and Airforce Institutes] in Hannover and picked up the tonic. But unfortunately I was apprehended by the military police there who realised I was still wearing my opposing sides khaki cap, I had forgotten to take it off. So I had to make some sort of excuse about going to the NAAFI, but anyhow he didn't put me in the clink. And we completed the manoeuvres and then I went up to Hamburg for the winter season.

WB And Hamburg was rather more serious?

KS Yes. Hamburg I went to the British medical hospital there, which was a very good hospital. It was an old German fever hospital with, you know, wards in separate buildings. But it had an operating room, well two operating rooms and there was another anaesthetist there. He had spent six weeks with, gosh, with Lee of Southend who wrote the synopsis  $book^4$  so he wasn't too good himself. And I then had about four weeks with him and he then became ill and was subsequently posted. So I was really thrown in at the deep end. We, we didn't have much serious stuff to begin with, it was mainly dental extractions, so I learnt very quickly how to pass a blind nasal tube and to cope with the simple things. But, he then was sent off. And intermittently I was sent off, as was every other officer, to be a general practitioner again. When one of the regimental medical officers went home on leave we were sent out to do it. So that way I got stuck with the 15<sup>th</sup>/19<sup>th</sup> Hussars, for example, for a couple of weeks. And they were a funny stuck-up crew. Then I got stuck with that other Canadian, a bloodthirsty Canadian highland regiment out at Bütloss(?) out on the coast. You used to go on manoeuvres and then come back and get blind drunk for three weeks. So there were a lot of experiences like that, but in between one did the anaesthesia. And actually I was looking at some letters this afternoon that I wrote home and I am surprised how much anaesthesia I actually did in that time. Most of it was very hand to mouth; I had some frightening experiences.

WB Can you describe one of your frightening experiences?

KS Well, I mean there were things like this: I remember one of these officers from this regiment coming in and he had to have an abdominal operation. So I thought that for the first time I would use curare, you know, the muscle relaxant drug. And I looked it all up in Lee. And Lee said you give half a gram of thiopentone to put the patient to sleep, you then give 15 milligrams of curare, you give them a couple of puffs of oxygen and then you stick the laryngoscope in and put the tube down. And

<sup>&</sup>lt;sup>4</sup> John Alfred Lee, *A Synopsis of Anaesthesia*, Bristol: John Wright & Sons, 1947.

as I stuck the laryngoscope into this chap he just sat up and took the laryngoscope out of my hand! And of course what I hadn't thought about was the fact that here was a man who'd had half a dozen gins before lunch and even more before dinner, and that I hadn't adjusted the dose to suit his physique. Secondly, I hadn't waited for the curare to act and in any case the dose was too small. And I was rather flabbergasted by the way in which he responded and I went, on my next leave I went home to see my father's GP who was also a consultant anaesthetist by this time. A very nice man called Walter in Exeter. And I explained my predicament to him, and he very patiently explained that when you give thiopentone it reaches its peak effect at around thirty seconds and then it begins to wear away, whereas curare takes four minutes to come on. And he gave me a little lecture about this and then he gave me six ampoules of stuff called Brevidil E(?), and he said 'You know, this is marvellous stuff because you just give this and the patient twitches a lot and then they're absolutely relaxed.' And this was the first time we got this non-depolarising type of, this depolarising type of blocker which causes the muscles to contract and then leaves them completely flaccid. And these were the first six ampoules and sure enough I brought these back and gave them to the patient and there were the vocal cords and everything was very easy. So that was the beginning of the, that kind of intubation and one learnt this sort of way.

WB And did you manage to obtain further supplies of that while you were in the army?

KS No, not while I was in the army. No, they were very limited. But when I came out of course it was in routine use clinically in, in England.

WB And when you came out you went straight back to UCH?

KS Yes, I... Looking through these letters that I wrote from Hamburg I realise now that I was still contemplating either a general practice or a GP with anaesthetic sessions. And I decided that I would get on with my part one examination. We had to do anatomy, physiology and basic sciences, for what was then the Diploma in Anaesthetics. So I took a correspondence course with the Red Lion correspondence place I think it was, and I did that while I was out there. Then when I came back I joined the Royal College of Surgeons course for the part one, their primary course, which did anatomy and physiology. And then halfway through that I took the part one of the DA and passed it. So I went to UCH on the advice of Wylie<sup>5</sup> from Thomas' who at that time was the advisor to the Faculty of Anaesthetists. And Massey Dawkins<sup>6</sup> offered me the job of junior resident anaesthetist, so I started in November with that and abandoned the rest of the course. And then I was at UCH really for the rest of my training period except for the time I spent in the States.

WB And Massey Dawkins was quite an influence, I believe.

KS Yes, I think there were three people who had an influence there. Massey Dawkins was a very strong, silent man, but he was the first man really to use epidural analgesia in this country and many people ridiculed him. But he was a very honest chap, very shy. And he and Alfred Lee at Southend and Macintosh later were great

<sup>&</sup>lt;sup>5</sup> Derek Wylie.

<sup>&</sup>lt;sup>6</sup> CJ Massey Dawkins.

friends through their interest in this technique. So he taught me that. Bob Cope, who was the paediatric anaesthetist at Great Ormond Street, a very tall Alastair Sim type man, who was completely addled intellectually... I mean he didn't know one end of a thing from another. And I remember having some tutorials, we actually were given six tutorials by him, and I remember him giving us one on spinal anaesthesia and one of my colleagues coming out and saying 'You know, I spent all yesterday afternoon trying to teach him about spinal anaesthesia, and he's forgotten it by today!' But he was a very, very kindly, well-meaning man, and I used to act as an advisor to his son's electric train set because I could never afford an electric train and his son had an electric train. So he was very supportive, and he was the man who got my name put down for the scholarship to go to the States and encouraged me to go. And the other person really was Bernard Lucas, who was an extremely rude man with a very great chip on his shoulder who at that time was consultant anaesthetist to The Brompton, the National Heart, Great Ormond Street and UCH. I mean he had the whole world at his feet and he threw it all away. He left his family, he went off with some curious psychologist lady, they just used to swear at each other all day long. And he just threw his whole life away. But he was very good in challenging everything, and this was the first time I had ever been challenged. He used to say 'Well, you know, that's nonsense.' And he was the first person who actually showed me an anaesthetic journal and said 'You ought to read it.' And he also supported going to the States. And it was because he and Harry Beecher were friendly, and the first anaesthetic, ether anaesthetic had been given in Boston in 1846 and then in UCH, that I decided in the end to go to Boston rather than to go to Emanuel Papper in New York or Virtue in Denver, and so forth. So I think those three people were people I owe, owe a lot to. But of course the senior registrar O'Donoghue<sup>7</sup>, who was the immediate boss, was very good in teaching me. He was a very small Australian chap who was very keen on sports, so he liked to watch television, which had just arrived at that time in the mess, and he did tend to leave one to get on with things alone. But we were very much pitched into it because unlike now when you are carefully graded we were just attached to a consultant. And you went and did his lists when he was there and if he wasn't there you also did them. And I remember the very first day I did Massey Dawkins' list. It was with this very frightening senior surgeon, and Massey Dawkins had talked this senior surgeon into using epidurals for everything. And so I had to give an epidural, which I had never given in my life before. And just as I was about to start this, in walked this strange bald-headed man who I later discovered was Sir Robert Macintosh, who had come to visit Massey Dawkins to see how he performed the technique. So anyhow he said who he was and I explained that Massey Dawkins wasn't there, and I said 'Well perhaps you can help me with this.' So he told me how to do this, but anyhow the thing didn't work. And I do remember burrowing around under the towels because one didn't put a drip up before one started in those days simply because it was thick red rubber tubing and you had these sharp needles, and if you moved the patient it came out. So I was burrowing under the towels trying to put this needle in, and I remember this surgeon's voice saying 'Mr. Anaesthetist, can you relax the abdomen so that I can get my hand out?' And of course, all I could do was slip a little curare in and pretend I hadn't done so! So that was the kind of...

WB It was completely jammed, locked into...?

<sup>&</sup>lt;sup>7</sup> Dennis Michael O'Donoghue.

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KS I mean he had got his hand in, you know; he had made a big slash. He hadn't been bothered to ask me of course whether the patient was ready, and I was very junior and he had got all his students there. And these surgeons did, they just, you know, and they were very, very rude, they never knew your name or anything like that. And dear old Mac by this time had disappeared, but that was when I first met him, and as I say, the epidural didn't work on that occasion!

WB But you later got to know him quite well?

KS Well, only in so far as he wrote to me quite a lot. There was a trial of complications after spinal anaesthesia, the Woolley and Roe trial, which Bob Cope was very much involved in on the opposite side to, to Macintosh.<sup>8</sup> And Macintosh wrote to me on several occasions about respiratory problems and things like that because he knew I was interested. I have the letters. But I don't quite know why he singled me out, I think he wrote to all sorts of people at that time. And I saw him at the odd meeting but I really, you know, didn't have anything to do with him as such.

WB No. You never worked with him?

KS Never worked with him. No.

WB I think we'll take a short break for a few moments and start again in a minute.

KS Right.

WB Professor Sykes, we were just talking about your experiences at UCH, but I would like now to move on to your year abroad in Boston, and the States and Canada, which I believe was a very formative year for you. Could you tell us about that?

KS Yes, I was, I was very lucky to go. I mean, I would never have thought of going had not Bob Cope and Bernard Lucas get, got this Rickman Godlee travelling fellowship from UCH medical school. Apparently it was up every three years and it just happened to turn then. And they suggested that I should go and it certainly was a marvellous opportunity. On a personal scale it created a lot of trouble because I had just got to know my wife and I felt that really, since I was by that time getting on in life and still hadn't settled down, I thought that I wasn't going to rush into a marriage. However, in the end she stayed at home and I went. Because I really felt that I wanted to read and, you know, get as much out of it as I could and I couldn't see how she would find anything to do in, in the States.

WB She was a nurse at that time was she?

KS At that time, yes, she was, she was a nurse, that's right. But she left nursing at that time and then went into advertising and publishing and she... We actually became engaged after about three months. Her mother wrote and said 'You know, she is being taken out to the Dorchester by a farmer who has taken her up there in his jeep, and if you don't get cracking soon, you know, you are going to lose her.' So I

<sup>&</sup>lt;sup>8</sup> Roe *v* Ministry of Health, 1954.

sent back ten pounds to my mother-in-law and said 'Buy her a ring' and got engaged. But it would have been lovely to have her there, but I think it was the right decision because at Boston one was part of an international fellowship. Harry Beecher was a, a very dynamic character who travelled the world recruiting and he recruited people in very strange places and very strange people. But we were an international fellowship, as it was called. We were chaps who were separate from the normal American training programme, we came in after two or three years of anaesthesia, and we therefore had a broad range of experience. The, at the Mass. General of course it was a most enormous enterprise, quite unlike anything we had seen before, really firstclass surgeons but unbelievably egotistical. Anaesthesia was very much the handmaid; most of the anaesthesia was still ether or spinals or catheter spinals. And although relaxants had been used Beecher had just published the death study showing that there was a death rate of something like one in four hundred and fifty of people who had been given curare. This was in eleven university hospitals. So it was very difficult to reconcile this with ones own experience because by that time I had already given something like I think four thousand anaesthetics and I had not had a death. And most of those or a lot of those had been with relaxants. So I'm afraid I was very much agin the clinical anaesthesia and determined to reform it. And I had many long arguments with Beecher and with his assistants, Bunker and people like that, but over the course of the year I think we managed to teach most of the other people relaxants. Beecher finally admitted that perhaps he had been wrong and... But he challenged me and said 'Right, if you believe that muscle relaxants are better, set up a trial.' And I did set up a control trial where we randomised patients undergoing gastric surgery, cholecystectomy, to an ether sequence or to thiopentone relaxants. And although the trial was somewhat diluted by the fact that he refused to allow me to use curare – we had to use the suxamethonium drip, which meant to say that the level of relaxation was changing all the time. And we got a lot of problems with prolonged paralysis afterwards because the junior residents had used too much. And although the anaesthetists were only second year residents and the surgeons were second year residents, so we had five or eight hour gastrectomies, I mean unbelievably slow surgery... At the end of the time – and the paper was finally published in 1959 after a number of other people had continued the study – it showed no difference between the two. So, apart from the fact that the ether patients had many more, much more vomiting and the thiopentone relaxant patients had many more chest complications. But actually during surgery there was no difference in the way the surgeons could operate, and so forth. So it taught me a lot about science, and during the time I had a lot of opportunity to read. And I gave a lot of talks while I was there, and for the first time got into the library, and I used to read every afternoon, every evening because I was resident. And also I started on three little research projects, none of which came to anything apart from this control trial, but each one taught me something. And Beecher was very generous with time off, and while I was there I was able to visit most of the major centres. People were remarkably hospitable. I mean I remember walking into Emanuel Papper's department in Columbia Presbyterian in New York, just introducing myself without any previous warnings saying I was a resident from there, could I possibly look around, and he took time off and showed me round the department. And this happened wherever one went. And I learnt a lot about running departments. I learnt a lot about different people. I met a lot of different people. And I think with the exception of the absolute south, New Orleans, I really visited most of the departments that mattered. Both in weekend breaks, seeing them at meetings, and then in a long six-weeks tour which I took at the end of my time when I went across

through, up to Montreal and across through Canada and down to Santa Fe. And then back I drove, picked up a car there from my friend's aunt who had been... Well she wasn't an aunt; she was the lady he had been evacuated to during the war. She was the ex-chief nurse of the Navajo Indian reservation. She sold us a car for a hundred dollars and we drove it all the way back to Yellowstone and back through the mid-West. So that was very valuable, looking at all these different departments and meeting all these people. And when I came back to UCH I was then made senior registrar and I started to try and do a bit of research with Bernard Lucas on pH, but the apparatus we had was pretty awful. But by that time I was <u>thinking</u>. So it was, although it was a very unhappy experience to begin with, I nearly came home several times, by the end of the year of course I didn't want to leave. And then subsequently I was offered a lot of jobs there and again, you know, nearly went many times. But they were exceptionally lenient and I think very understanding of a very wild chap!

WB And you were really made to think, perhaps, for the first time about...

KS Yes. I mean, everything was criticised and you'd justify it, you know, and you had to justify it. And this had never happened before, and so I think that really marked the turning point.

WB After that you knew you wanted to be an anaesthetist?

KS Oh, yes. I mean, by this time I was, you know, right into it. But I, obviously Bernard Lucas and I think Bob Cope at that stage recognised that an ordinary consultant job wasn't appropriate for me. And although I applied for a job at UCH which came up O'Donoghue who was the senior registrar got it, and quite rightly so. I felt aggrieved at the time but I was very young for the job and he was much more senior than I was. But then Bob Cope found this job at Hammersmith – I had never heard of Hammersmith – and I went to the interview, interviewed by Jimmy Payne and a couple of other people, I think there were three of us in for the interview. And I was selected and I had never been even to Hammersmith until the day I went there, 1<sup>st</sup> of March 1958. And I went to report to Jimmy Payne and in typical fashion - he has a, a bristly moustache and speaks with a Scottish accent – he said 'There are three bloody Russian surgeons here, take them around the place.' So I had no idea where to go, I met up with what turned out to be Macintosh's secretary who spoke Russian she was an émigré from the eastern countries. And I had these three surgeons from Russia – Schnetznikov(?), Popov and someone else. I walked down to that long main corridor at Hammersmith, found a little nurse and said 'I'm a new consultant here, I don't know anything about it. What is famous, you know, what can I show them?' And she explained a little bit about how it had been a workhouse on one side and a hospital on the other and the stones that the inmates used to break were still there. And then she said 'Well there is this thing called a linear accelerator, which they've just opened' and she showed it to me. So I marched off with these four people, little Popov kept on getting left behind because he was copying down the inscriptions on the foundation stones and things like this. So we arrived with the, two of the surgeons and the translator, in this linear accelerator room. And what had happened was that the machine was so heavy that they built it into the roof and arranged that instead of the machine coming down to the patient the floor and table would come up to the

machine. So I went in there, and there was a little man called Deeley<sup>9</sup> in charge of it, a very nice Welshman. I explained again who I was and he very kindly took time out to explain to these Russians what happens. And just as he was pressing the button to raise the floor up along came Popov, scribbling down, he suddenly looked up and of course there were pictures all around the wall. And it must have looked to him as if he was in the giant crusher because the floor came up, and he turned around and fled and we never saw him for about two hours afterwards! So that started Hammersmith, and then I found the department. And Jimmy Payne had got a department, I mean he was a fairly belligerent chap and he had only been appointed there about a year. All the other people were consultants who had worked with the consultant surgeons whom Ian Aird the professor of surgery had gathered around him in the war. So Ian Aird had come back to Hammersmith, brought all these chaps in, they brought their anaesthetists like Woodfield-Davies<sup>10</sup> and FG Wood-Smith, and so forth. And we were the, just the two academic lecturers and Jimmy went to try and get a department, and he couldn't get one. So, typical Jimmy, he just blocked off the corridor between C and D blocks on the first floor with old apparatus. And then he just put two great armchairs and a desk in one part of it, put two double doors down the middle. So we had a lecture theatre in the middle and then we had a little lab at the end. And that was it; that was our department.

- WB But you had a minute space to work in, I believe?
- KS Tiny. I think it was eight and a half inches or something of bench-space...
- WB Per person?
- KS For the rest of the time there!
- WB And you were supposed to be teaching, the others?

KS Yes. Well the job there, you see, was different in that we did five or so clinical sessions and the rest of the time was supposed to be teaching and research. Well, what we <u>had</u> to teach were the few registrars, there were four or five registrars I think and a senior registrar, so we taught them as you would be taught in a teaching hospital in the clinical things, the theatre. But Jimmy had also started courses for the Diploma in Anaesthetics and also for, later for the fellowship. So we ran three-months courses, full-time courses with about eight or ten people mainly from the Arab or Indian countries, that sort of thing. And we used to lecture to these people, so one probably lectured once, once a day, if not twice a day, and he dragged in all sorts of people and they had a three month full-time course. So they were sort of cram courses for people from abroad, on occasion they came up to theatres in the afternoon and got a bit of practical experience. And that teaching load continued all the time that I was at Hammersmith, so there was always a course running.

WB But you in fact also initiated several very major ... advances, like the cardiac arrest service.

<sup>&</sup>lt;sup>9</sup> Thomas James Deeley.

<sup>&</sup>lt;sup>10</sup> Hugh Woodfield-Davies.

KS Well yes, I, I was very lucky. I mean, what happened when I first went there in '58 was that I started doing a little bit of research on rebreathing in anaesthetic circuits. And then I, almost immediately, it was '58 and I... It was about the end of '58 when I met the clinical pharmacologist at UCH outside the pub, the Wellington, there and he told me he had just come back from Durban where he had been doing control trials on tetanus, using various sedative drugs to treat tetanus. And I said to him jokingly 'Oh well, it's time an anaesthetist got into this because you physicians can't cure these things.' This was Desmond Laurence the clinical pharmacologist, regional(?) clinical pharmacology. And he said 'Well do you want to go?' So I said 'Yes,' unthinkingly, and the next thing I knew was that I had a grant from the Wellcome Trust, or a letter from the Wellcome Trust asking me how much money I wanted. So we took three ventilators and all the ancillary equipment tubes, a pH meter and a little Haldane, simplified Haldane blood gas analysis apparatus, packed them all into great big cases and I set off with my wife and two children. And we went out to Durban for six months and continued the trials by using mechanical ventilation. And we were supposed to treat adults because they had a large number of adults with tetanus, but they also had a lot of neonates. And somehow the message got through to the bush that I was there with all this apparatus, and no adults appeared for the first few weeks. So, in desperation, I got all my apparatus, we started treating the neonates who were pouring through. And they had an eighty per cent or more mortality, and we managed to start saving them. They required about a month on a ventilator. I lived in a little house about three hundred yards away and Durban, even in their winter which was, this was sort of May to September, was very, very humid and about seventy degrees so my asthma was very bad. And I used to have to rush down in the middle of the night when the nurses pulled the tube out and so forth. But I was given a, a ward, three, three or four staff nurses who used to go to sleep most of the time. I mean one had to have alarms to wake them up, and one had to have elastic bands to reconnect every connection because they were too lazy to connect the connections. So you were dealing with a very poor standard of nursing although these were the best in the hospital. And Barry Adams, a professor of medicine who was a white South African, very liberal-minded, he ran a department of medicine which was certainly as good as UCH. I mean, they knew everything about their patients, they had formal ward rounds, the little African nurses came and the African students came. And in his little part of the hospital everything was run like a teaching hospital. In the rest of the hospital twenty thousand patients in the bed, under the bed, on the bed, chaos...

## WB Twenty thousand patients?

KS Twenty thousand patients about in King Edward VII hospital. And of course, path services were very bad. If you wanted a bacterial swab it always came back pyocyaneous because that was the bug everywhere. But anyhow I learnt how to treat these patients; we reduced the mortality from eighty per cent to twenty-one per cent over the course of the six months. We started things. For example, because of the infection I made a bacterial filter out of a Horlicks tin with some cotton wool. I think that was the first bacterial filter to be used in, in intensive care. And I learnt a lot about mechanical ventilation with these various machines, and how to adapt them to babies. I know I had been to see Jackson Rees<sup>11</sup> before going, and I remember him

<sup>&</sup>lt;sup>11</sup> Gordon Jackson Rees.

telling me that you would never be able to use a ventilator on a baby, although he was very helpful about how I might hand-ventilate them in his characteristic manner. I also wrote to Pask who was at Newcastle, first at Newcastle, normally a very dour and uncommunicative chap. But he was very kind to me and he actually sent me a little ventilator out while I was there and gave me some advice about measuring carbon dioxide with a blue dye. But I used Moran Campbell's rebreathing technique to measure  $CO_2$  and I spent a lot of time working on that. You just take a bag full of  $CO_2$  mixture, re-breathe it and it equilibrates with the blood, and then if you analyse the gas you can tell what the  $CO_2$  is in the blood. And this I had learned from a very lucky period incorporated in a CIBA symposium in 1958, the end of 1958 in December. About thirty of us were got together, people interested in pH, and there was Severinghaus<sup>12</sup>, there was Pål Astrup, there was Eric Neil. All the names in acidbase balance were there, and poor little me who knew nothing about it. But Moran Campbell had talked about the rebreathing technique there. Astrup had talked about his technique, which I already knew about because John Nunn had come to some of the meetings they used to run at UCH in the evenings and told me about it. That was about 1956. So I used this technique, and I think that made a lot of difference because it was the first time that I had been able to control the levels. And that actually was what had made the difference in the 1952 polio epidemic in Copenhagen, the fact that Pål Astrup had developed the technique of measuring CO<sub>2</sub>. And so we could adjust the level of ventilation and make sure they were getting the right amount of ventilation. So, I did a little lecture tour around South Africa after that. But that was an incredible experience, you know, being there during the Durban riots and so forth. There were 150 people in the mortuary every Monday morning, you know, terrible murders amongst the Zulus and a lot of episodes with our various servants. We tried to be very liberal, and I found that all my sugar was being used to brew up beer! So that was a very good experience, but it meant to say that I came back to Hammersmith then and tried to get the ventilation of neonates going, quite without knowing that Ian Donald had tried to do the same thing in 1953. But anyhow, Peter Tizard and I treated three or four babies with reasonable success. There were the respiratory distress syndrome but their wards were on the other side, and by this time I was getting involved in the open-heart surgery and I had to look after patients on the other side of the hospital, and I couldn't do both. So I had to drop the, the babies. But he did say afterwards we really ought to have pushed that because we would, again we would have been one of the first people in the field.

WB Well, with such an achievement of getting a drop in the mortality to <u>that</u> level, I am amazed that it wasn't picked up in, in London.

KS Well, they... You see, neonatal tendencies vary in South Africa, in China, in India and places that just don't have the money even to inoculate the children, vaccinate the children. I mean if you, you know, vaccinate, not vaccinate, inoculate, these children they don't get tetanus. But in South Africa the midwives put cow dung on the cord, cow dung and Johnson's baby powder, and I think it was the cow dung that gave them the tetanus. So it was, it was quite unnecessary and of course they don't see anywhere near that much of it now. But, from my point of view it was a training in techniques of mechanical ventilation, a lot of which I owed also because I went to see Alex Crampton Smith at Oxford I suppose about 1958 before I went out

<sup>&</sup>lt;sup>12</sup> John Severinghaus.

there. And he taught me a lot in the couple of afternoons I spoke with him. So that gave me the grounding then to go into the open-heart surgery and start the ventilation there.

### WB So can you tell us about the advances that you made in open-heart surgery?

KS Well, I think perhaps before one should do that I should just say that when I came back from Durban I took over a list of bronchoscopies, anaesthetising for topical anaesthesia for bronchoscopies, from a man called Phillip Hugh-Jones who was a respiratory physician. An extraordinary polymath – he used to climb Kilimanjaro, go exploring, a good musician, built the first respiratory mass spectrometer. And he had working with him John West, who was subsequently to become perhaps one of the best known respiratory physiologists ever. And these two were wanting to make measurements of the gas flow in and out of the different bronchi during the course of these diagnostic bronchoscopies that were being done with patients with lung cancer. So I had to produce a conscious patient who did not cough whilst this terrible long stainless steel pole, rigid pipe was put down. So I developed a technique for doing that which was quite successful, because these studies might take up to an hour, and in the course of all this of course I got to know quite a bit about respiratory physiology. I got dragged in then to be a subject for the radioisotope studies they were doing on the distribution of blood flow in the lung. And subsequently this probably influenced me going, going into the pulmonary circulation. But Phillip Hugh-Jones was very dynamic and one of the other things, besides involving me in this work, was that we had a cardiac arrest when he biopsied what he thought was a bit of bronchus but actually was one of the major arteries. And the patient died from the terrible haemorrhage, and although we transfused something like twenty pints of blood, you know, it just didn't normally happen in bronchoscopies. And he said we ought to have a resuscitation service. Now when I had been at Boston it was the custom before starting anaesthesia to have a surgeon scrubbed up, ready, to open the chest if someone got a cardiac arrest, which was a thing I had never seen in England. But so bad was the anaesthesia, and so sick were the patients at the Mass. General that this was custom. So we started the service in 1960 by equipping all the theatres and all the main parts of the hospital with trolleys and a knife and drugs. And I started doing, teaching the nurses and physiotherapists and so forth and I became resuscitation officer. So we started that, and then in 1960 the closed chest method of compressing the heart came in, which made it a lot easier and a lot more acceptable. But we ran that service and I think, again, it was the first definitive cardiac arrest service. And we could get about a twenty per cent survival rate off cardiac arrest in hospitals. So it was worth doing. And then towards the end of 1960 I started making very derogatory remarks about the post-operative care of the open-heart surgery patients, again in my usual objectionable self. And the heart surgery was due to expand, it had been trickling along with very poor results since about 1958, although they had done their first case in '53 it wasn't really going. And Betty Lloyd-Jones and John Beard who did the anaesthesia asked me if I would go in and I said I wouldn't go in unless I had the facilities for doing research on these patients, that we knew nothing about what was going on to them. And so it was agreed that on Tuesday that would be research day, and if I wanted research to start late because I was doing a measurement beforehand he would start late. Well they gave this day to a trumped-up senior registrar who was a hopeless surgeon and a very irascible fellow, so there were many battles between us. However, we stuck to our guns, and even when he used to insist

on entering to Wagner played over the loudspeaker – we used to have battles about silencing that! – we managed to start studying these patients. And the breakthrough really was the, the oxygen electrode, because when I had gone to this pH symposium in '58, Severinghaus had brought over his  $PO_2$  and  $PCO_2$  electrodes which were marvellous where you could get a reading in three minutes. And Peter Tizard had inherited John Severinghaus' device, which he had left behind. I don't know how he got it but Peter Tizard gave it to me. And I had two research fellows who joined me in 1960, Bill Young from Canada and Jim McClenahan from the States, and they were only too glad to start working on these open-hearts. So I couldn't have done it alone but they had the time to be studying patients while I was in the theatre. And we inherited these electrodes; we managed to make them work. And it just shows the sort of isolation that existed, when we had a *conversazione* at Hammersmith that year I discovered that right next door to me there was a chap called Ian Silver developing his own electrode, and John Nunn had developed his electrode in Birmingham. So we were all working on little islands as it were, not talking to each other. However, what we did then was to start defining the problems in the lung after operation. And I found that they were getting a special syndrome which was unlike anything else, and we decided in the end that it was due to the perfusion of lung, breaking up of lung in the heart-lung machine. I started treating them with ventilators. And fortunately the first few we treated were successful even though one girl had three cardiac arrests, I remember, in the recovery ward. She's subsequently gone on and had four babies and they are all very well and live, live in a little village near where my aunt lived. With a lot of opposition from Jimmy Payne who didn't, you know, he was naturally very jealous I see now, I ran the, what became an intensive care unit, it started off as a recovery ward. But very shortly afterwards we had tetanus cases flown in from Jersey and all round because it had been known that I had been working on tetanus. And then we got more and more general medical cases so by, certainly by the end of 1960 we had a generalised intensive care unit. And although there were respiratory care units elsewhere I think that was the first of the, the generalised units because we were treating medical and surgical cases.

WB Which are now standard?

Which are now standard, yes. So, I was very lucky to get in on the beginnings KS of the open-heart surgery and able to get going on the physiology and what happened to the lung. That took me into extracorporeal circulation, we did a lot of experiments showing that it was the heart-lung machine itself that was damaging the lung through damage to the blood. And it brought me into contact with Dempster<sup>13</sup>, who was working on rejection of kidneys at that time, and I was also working with Shackman<sup>14</sup> who was doing the first live donor renal transplants, I used to anaesthetise his cases. And he didn't know anything about acid-base. And it was extraordinary to me to read back to the '52 period when the physicians then didn't know about acid-base and they attributed this high bicarbonate level to some curious thing happening in the kidneys, whereas in fact it was due to high CO<sub>2</sub>. And Shackman did exactly the same in '63. He was a surgeon, he just didn't know about it, and I couldn't believe that someone in his position in charge of an artificial kidney unit didn't know the fundamentals of acid-base balance. So, by setting up a blood gas service, which we ran for the hospital, I got into a very powerful position because I knew the results and the

<sup>&</sup>lt;sup>13</sup> WJ Dempster.

<sup>&</sup>lt;sup>14</sup> Ralph Shackman.

surgeons didn't. And although Bill Cleland, who was a senior surgeon, was very understanding, very helpful and had no problem the other trumped-up people were very difficult to deal with, and it was having this extra knowledge that enabled us to put the thing on a scientific footing. And also of course by just living in the place night after night, and <u>watching</u> the patients as they went into respiratory failure and making measurements, and then treating them and seeing what happened.

WB And this information was disseminated through the *BMJ*, or through what channels?

KS Yes... We didn't publish very much in those days, I'm afraid...

WB No?

KS Because, you know, one was just so busy. I was beginning to travel quite a lot; the clinical load was enormous. You know, you started operating at eight in the morning and you would finish the case by five o'clock. It's not like nowadays when you do an open-heart in two or three hours, it took eight hours then. And then you stayed in overnight to watch them through the night and then maybe several other nights. So it was a very busy period from that point of view. I was trying to get going in the lab and we had a lot of other projects going, and then I began the experimental work about '64. We then used the department of surgery's labs for that, so that was quite a load. And I think that we actually produced the first paper on hypoxia during anaesthesia at the same time as John Nunn in '65, and also this paper on the openheart surgery. But that had been held back for nearly two years by a, a man who was in Boston who subsequently died, Mike Laver. I discovered afterwards that he had heard me speak there in 1962 on this problem, and he started doing the same observations, and he was the adjudicator of this paper. And I discovered from one of his colleagues that he had held it back two years saying first of all it must be in one paper, and then it must be in two papers, and raising objections while he did, he published his. But his came out at the same time eventually. So there was an element of that about it as well.

WB Its tragic these blockages that you seemed to run up against. I think you were also having trouble convincing the Red Cross, the ambulance service, and the police about mouth-to-mouth resuscitation.

KS Yes, yes, I mean its just amazing how conservative people are. Yes, I remember going to the police force and trying to convince them that mouth-to-mouth ventilation was the thing to treat drowning casualties. And, well they said they didn't want to do it, they had managed quite well with the Silvester method for so long and so forth. And I said 'Well, how many successes have you had with drowning?' And they hadn't had any, but they weren't prepared to try this. And the Red Cross were equally difficult. Finally, they were forced into it by all sorts of people asking them for training courses. So the ambulance service got onto it itself, the London ambulance service got onto it before the Red Cross.

WB And now we all take it for granted, which is again an achievement of yours.

KS Yes. Well these are, I mean, I was only one person talking about it. But it did take a lot of persuasion, and now of course the ambulance service paramedics are virtually trained by anaesthetists in... Dr Ward<sup>15</sup> here in Oxford trains all the paramedics in Oxford. And they expect to be trained and they come into the operating rooms to learn how to put up infusions and tubes and so forth.

WB Now, you were obviously very busy at Hammersmith. You were leading a very productive life, doing lots of research and writing, beginning to write books. But the ... opportunity came up to come to Oxford, which I think at first you didn't welcome. Can you tell us about coming to Oxford?

KS No, I mean 1967 I was made Reader and 1970 I had a personal Chair, and I could just dictate what I wanted to do. At that time I had moved into the field of the pulmonary circulation. I mean, both John Nunn and I and other people in the States had observed this question that patients during anaesthesia had a lowering of their oxygen saturation, and we all wondered why it was. And there were various theories, and I got the idea that maybe the pulmonary circulation was being paralysed by the anaesthetic drugs. We knew the anaesthetic drugs dilated the peripheral arteries and veins and maybe, I thought, they were doing the same thing in the lung. And there was this mechanism in the lung which I had just read about, which was discovered in 1948, that in bits of lung that aren't very well ventilated the blood vessels cut, close down so the blood is diverted away from them, so that the ventilation and the perfusion throughout the lung is matched. So I was working on the thesis that maybe our anaesthetic drugs tried, did something to this. And by 1970 we had got various animal models going. And over the '70s and '80s we were incredibly productive I think, showing not only that inhalational anaesthetics but drugs used in intensive care - like inotropic drugs, dopamine, isoprenaline, salbutamol, drugs used in asthma inhibited this mechanism and so caused hypoxaemia in patients. So, I really felt I was doing some good science for the first time, and we got papers in the Journal of Applied Physiology and Physiology and so forth. And I had a good team; lots of people came to want to work with me. There was no problem about money, no problem about lab space because Gordon Robson had come in '64 and got us very good labs. And I was in fact the external assessor on the committee for Oxford... You know, you were appointed over a five-year period, so when the Oxford Chair came up Alex Crampton Smith told me he was going to retire, and would, you know, would I come to the meeting, which I did. And I came to this very ... alcoholic lunch at Merton, chaired by Sir Rex Richards who I didn't know at the time and we were suddenly asked, somebody turned round to me and said 'Well, who do we have? You know, 'Its 2 o'clock, I've got another meeting at half past two, who do we have for the Chair?' And I said 'Well it depends what kind of person you want.' Anyhow, we went through the list and they weren't suitable. And so I suggested three other people should be invited - one from the States, and one from Australia, and the other one from England. And as I was going out the Regius said to me, you know 'That was a waste of time.' And I said 'Why is that?' And he said 'Well they want you.' So I said 'Well I don't want to come, because I'm very happy and my wife is busy in London.' She was a freelance lecturer at the Victoria and Albert by this time and running a lot of adult education courses, and I didn't think she would get a, a job in Oxford, not having a degree. And, in any case I didn't want to take an

<sup>&</sup>lt;sup>15</sup> ME Ward.

administration(?), and I knew that the department here was unhappy to say the least because of the reorganisation of the John Radcliffe. Anyhow I resigned from the committee and then eventually they decided that they wanted me. And I came back and I was able to bargain fairly well. So, coming to Oxford was not something that I'd looked forward to. My wife talked me into it; said it would do me good to come and take on a new challenge at the age of 55 or whatever I was. But morale was very low. The lovely old Radcliffe had been virtually evacuated, there were a few services still running from there but everything had now moved to the John [Radcliffe]. People were now scattered, they didn't see colleagues, they were in their car moving between places. We had workshops on the Churchill site, the John Radcliffe site, the Radcliffe site, pain clinic down at Abingdon, main laboratories up at the John Radcliffe and the Radcliffe. Twenty-five technicians all sitting round doing nothing anywhere, and no one really being very productive because there had been a hiatus between Alex Crampton Smith and myself. And, you know, there was just a, a great sense of demoralisation. So it did take... Well we got the research going very well. Fortunately the people who were going to come to the Hammersmith came with me, we had the labs up and running and we had six research groups going within about a year. So that side of things went very well; we got a lot of grants and everything. But it was a real hassle trying to get the clinical people to change their views. I mean, they were not even giving oxygen to patients when they were transferring them back to the recovery ward. And I think during Mac's period clinical standards were probably quite high, but they, the boys hadn't moved. They hadn't been anywhere else, they were very in... in-looking. So it took a long time to try and get that going. The technical service was a problem because they were very anti, they had never done a day's work for years, and trying to get them motivated was difficult. And we subsequently discovered that the chief technician had been actively undermining the whole problem. So I actually developed an ulcer, which I had never had in all the stressful Hammersmith days, and I didn't realise what it was and it bled several times... But by about '85 everything had settled down quite nicely and we had a very efficient and good department, I think.

WB And so you could get back to your research?

KS I managed to keep my eye on the research by being fortunately close to the labs. And so, you know, every evening after the day's experiments the boys would come up and we spent a lot of time together discussing the results. But I was never able to  $\underline{do}$  the experimental work myself again, which is a pity because you, it's only by being there that you observe something happening. And it meant it was more difficult to generate research. But also planning all these groups and getting, helping them to get money, grants and things, took a lot of time.

WB Did you resent that time taken away from...

KS Well, I didn't like doing it, but I realise in retrospect that one had a lot of experience that could be used, and that is the job of a, a person... I mean I was very selfish. I liked doing research, I liked doing clinical work, I continued to do my five days a week clinical here, and on call every fifth night. And I think with that kind of experience one can help younger people, and certainly I mean one had very, very good young people here. We had twenty research fellows most of the time, half of whom were basic scientists and half of whom were clinicians and a lot of them got

their MDs and PhDs. And I think we, we turned the department into a pretty good research place. The clinical standard was very good and we had a lot of facilities that other people didn't have. We just had the problem of four separate hospital sites and patients being brought into the John Radcliffe with a head injury, taken down to the Radcliffe for a scan, and then brought up back again to have their legs fixed. Crazy. And I think all the decisions that had been taken about medicine in Oxford have been wrong over the years, they've all been biased by ... persons.

WB They're not patient-centred, are they?

KS They're not patient-centred.

WB No. Whereas you've managed to instigate a patient-controlled analgesia service, which must have been a very great advance...

KS Well, in our department by 1990 we knew that, well 19... The late 1980s actually we knew that there were much better methods of controlling pain after operations, and after all the pain is the one thing the patient thinks about. And I was working particularly with a, a surgeon called Mortensen who did major abdominalrectal operations, and so I, I felt that it just couldn't go on this way. And I wasn't prepared to run epidural analgesia continuously on the John Radcliffe site because we didn't have an adequate number of junior staff on the ground to deal with possible complications. So we started running this system of patient-controlled analgesia where they inject their own dose, in a very small quantity, with an automatic syringe which prevents them giving too much. And again I tried to put it to my colleagues that this ought to be a development that is done on a departmental basis, but I'm afraid there were too many people who were rather inert and they didn't do it. So in the end I ran my own service for my own patients. And it was a pity because we had a very active pain clinic but it was down at Abingdon, and I'm sure that group could have got this off the ground had they been nearer. So, I think there is an awful lot of inertia in Oxford. I mean the famous saying that having a Chair in Oxford is like trying to kick cotton wool balls into the wind is very true. One initiates a whole lot of things and it doesn't get done. And although there are very great brains here and I've been terribly stimulated and helped a lot, its extremely difficult to break down the conservatism and the isolation of individual groups.

WB Despite the fact that you had a very good team of people cross-fertilising. You had people in many disciplines, didn't you?

KS Yes, I mean we've, we've been accepted very well by the basic science people. I determined I wasn't going to the basic science to ask them for help, and in fact these liaisons sprang up with pharmacology and physics, mathematics, and biochemistry. And our PhD students would usually spend a year in one department and then rotate to us and then go back, or the other, vice versa. So, we did actually have a very good and still do have a very good relationship with these people. But its been done very much on a personal basis, and I think that one needs a lot more of this. And its not rendered easy by the general attitude of the average academic in Oxford who is very jealous of his own little field and not prepared to take a risk.

WB And not necessarily contemplating the universal good...

KS Yes.

WB Rather than the local good, and...

KS Yes. I mean the people we have linked with, people here at Brookes for example and so forth who've got a rather broader outlook have, have been much easier to deal with.

WB And you were writing books already at Hammersmith on respiratory ventilation?

Yes. During the time of this, 1960s, Philip Hugh-Jones got the boot. And one KS morning we went in to find Moran Campbell sitting at his desk, and he said 'What's all this about?' And McMichael<sup>16</sup> who was professor of medicine who was a great gauleiter had decided that since Philip Hugh-Jones had taken some part-time sessions at King's he was out, he was no longer a member of the Hammersmith staff. So he just sacked him, just like that. And poor old Moran Campbell came in... Well Moran was a very dynamic respiratory physiologist, very original thinker who I had met at this pH symposium and I knew from the Middlesex, and whose technique of rebreathing PCO<sub>2</sub> I had developed. And Moran and I got together, and Philip Hugh-Jones had already treated a patient with chronic bronchitis on a, on a ventilator in 1959 and I was all ready therefore to start treating these medical cases who came in with cutive(?) exacerbations of chronic bronchitis. And, and Moran Campbell welcomed this, and so we used to do joint ward rounds. But of course we argued like mad because he wanted to have what he called controlled oxygen therapy which was you keep them on low doses of oxygen, and not ventilate them. And I used to say to him 'Look, your patients are blue. If I ventilate them they turn pink.' And he used to then turn round and says 'Yes, but if you put them on the ventilator can you get them off?' And these were two very good questions. So we spent five years sorting out this clinical problem, making observations and measurements, and of course what he said was true. So we gradually developed a way of treating them, a scheme of treatment that you used controlled oxygen therapy for a certain length of time and after this, then you put them on the ventilator providing that they had a chance of coming off the ventilator. So, in 1965 a friend of mine wrote to me and said would I write a book on respiratory failure, because I had been lecturing a lot about it. And I started... I didn't actually publish it with his, his publishers that he was reading for but I wrote it and finished it by 1969.<sup>17</sup> And I put Moran Campbell's name on it although he did nothing but actually read it and write very rude words all over it! And then Martin McNicol who was his registrar at the time at Hammersmith did the chronic chapter. So that actually was very successful, it was translated officially into Italian and Spanish and Polish. There were pirated editions in Russia and I even had a copy, a complete copy of it sent from India with an Indian chap's name on it. And it ran, I think we reprinted it twice then and I did another edition in '76. But, it was that, you know, every author has one book... That was it, because that was how I treated respiratory failure and how I had worked out how to do it. And so anyone could turn to that book and it gave you the simple practical ways, the reason for doing it, and it

<sup>&</sup>lt;sup>16</sup> Sir John McMichael.

<sup>&</sup>lt;sup>17</sup> MK Sykes, MW McNicol, EJM Campbell, *Respiratory Failure*, Oxford, Edinburgh: Blackwell Scientific, 1969.

was very popular for that reason because it was the only book at the time. 1970 the, they changed the examination and put in this subject called clinical measurement, how to measure blood pressures and blood gases and this sort of thing. And I had been to some courses run by Percy Cliffe at the Westminster who was one of the first doctors to start measurement so I had a vague idea about it. And anyhow Mike Vickers who was at the Hammersmith at the time and I settled down and wrote a book within a year for this part of the exam, which again was very successful.<sup>18</sup> Reprinted several times, very simple, and I've done I think three editions since, but each edition has got more complicated and less successful!<sup>19</sup> But I did have a very nice do at, in Ireland not so long ago when an Irishman who was subsequently going to the States presented me with this little bound black volume, and it was labelled in gold-leaf on the other side 'The senior house officers' Bible.' And it was in fact the first edition of this book, which he'd used to get through his exams.

WB How wonderful.

KS And he'd now re-bound it and handed it back! So, I at least can claim that I wrote the SHOs' Bible!

WB Tremendous. And that shows obviously that you had a great deal of influence which, if we can just mention your experiences in Finland, were much needed because anaesthesia wasn't as universally available as it was in this country in 1960 when you went to Finland. Could you just tell us briefly about that experience?

KS Yes. I, I mean, I think basically any success I've had has been due to the fact that I've found it very, very difficult to do academic work. I have no memory, I always have to read everything a dozen times and I find it very difficult to do mathematics or anything like that. So I think therefore that I'm just one step ahead of the reader and I can explain things fairly simply. And this came out as you say when I went to Finland. The, it was the first overseas visit I did, I was invited there by Leo Telivaro(?) who had been across studying the extracorporeal circulation at Hammersmith. And he was influenced by Massey Dawkins who was, I think, one of the first anaesthetists ever to go there because his daughter married a Finn. But I went to give a postgraduate course, the first, their first postgraduate course on respiration in 1960, and taught for about a week on respiration knowing very, very little about it. But there were very, very few anaesthetists, there were only about half a dozen anaesthetists, I think two in training, and very little anaesthesia being done because the surgeons had to do it all. They were very much trained in the German school, and if the surgeon said 'I'm going to cut off your leg,' he cut off your leg and if he gave you a spinal you were lucky. And indeed even until the19, mid 1960s, nearly '70s, a dentist of my acquaintance there said people did not want to have an anaesthetic even for having a tooth out. They came in and preferred to have it done without. So they were very distrustful ... of anaesthesia. And I remember that I had to go on the radio and record an interview, which of course was translated, and say that in now in 1960 in Finland there is a possibility of having a general anaesthetic for any condition.

<sup>&</sup>lt;sup>18</sup> MK Sykes, MD Vickers, *Principles of Measurement for Anaesthetists*, Oxford: Blackwell Scientific, 1970.

<sup>&</sup>lt;sup>19</sup> MK Sykes, MD Vickers, CJ Hull, *Principles of Clinical Measurement*, Oxford: Blackwell Scientific, 1981. MK Sykes, MD Vickers, CJ Hull, *Principles of Clinical Measurement and Monitoring in Anaesthesia and Intensive Care*, Oxford: Blackwell Scientific, 1991.

Okay, there weren't enough anaesthetists but there soon would be. And within a few years they had three hundred anaesthetists, just as the Russians who came in '58, the three Russians I took around spent a fortnight in England, they went home, and next year there were 1500 trained anaesthetists in Russia. So, it was the beginning of everything and one just, the contrast between what it was like in a very civilised country... I mean Finland, marvellous aesthetics, very, a lot of philosophy, very wonderful people, great literature, opera, that sort of thing. <u>But</u> no anaesthesia in 1960, or very little. And that contrast of course still exists today in, in a lot of the world and it shouldn't really be necessary. There are enough people to give the anaesthetics, but they tend to get concentrated in the places, they get into Boston and London... And the good thing about the Health Service is its remarkable how we can still have the same standard of care in John O'Groats as we can in the centre of London, and indeed often better.

WB Looking back over your career what do you think are the major advances that you have seen, personally, in the world of anaesthesia?

KS Well I think the, in my time the thing that matters to me of course is that [accuracy], science has come into anaesthesia. I mean, when I started there was no science. There was only one textbook and it just described patients going blue or not blue and that was that. There was no physiology, you didn't know, never heard of CO<sub>2</sub>, you'd never heard of, well blood pressure, they didn't even take blood pressure when I started, I didn't take blood pressure except for epidurals, and so there was no measurement. And the, I think the great thing is that the availability of these measurement tools which came in with the blood gas electrodes in the '60s and subsequently has enabled us to make measurements on patients. So we now have scientifically directed treatment, and the great fascination of anaesthesia of course is that really we are applying our techniques to the patient's physiology. And I think we are able to do this more than any other branch of medicine because we have all these measurements. We are dealing with an acute situation where we upset the patient's physiology, or the surgeon does, by suddenly losing blood or doing something. So we are now understanding what we can do about it. And that understanding has come over the last forty years and has been largely promulgated by the academic departments. When I started there was a Chair at Oxford, the Chair at Cardiff started I think in '48 and the one at Newcastle, both Oxford trained people, and Beecher<sup>20</sup> had his first chair in 1941. So it's a relatively recent subject and now we have, I don't know, twenty or thirty Chairs in this country, probably far too many. But there has been a growth of scientific medicine, I think that's the first thing I would say. I think the second thing I would say is that although we hear a lot of complaints about the average consultant and his pomposity, we have to recognise that medicine lived on pomposity for three hundred years. And I never know how those seventeenth and eighteenth century physicians earned so much money and gave the Radcliffe Camera and all that sort of thing! I don't know how those chaps ever justified themselves, because they couldn't cure anything. And really we were only beginning to cure things in this century. So, that's the other thing, is that now we are able to treat so many conditions... And although the, many consultants are still pompous and doctors are still bad at communicating I think those of us that have grown up in this last twenty/thirty years have learnt how to talk to patients. I mean, I have had a singular

<sup>&</sup>lt;sup>20</sup> Harold Beecher.

experience working on ethics committees with Joe Robinson(?) and Bob Elton(?) who have taught me how to write a simple statement to the patient, and that kind of thing. And we now teach our people to do pre-operative talks and to communicate, and I think that has been a great thing. The pomposity of the consultant has now largely disappeared and we have equality in the operating room, the surgeon will wait for the anaesthetist rather than exactly the other way round. So I do honestly believe we have a much higher standard of medical practice. I do believe that whilst there is still a strong financial incentive for many part-timers which I deprecate I do still think that the patient on the whole gets a pretty good deal and a far better deal than they did in the days of the voluntary hospitals. So saying it is disappointing that, for example, when I went to Hammersmith there were seven administrators for a seven hundred And I may say there were nearly seven hundred doctors in bedded hospital. Hammersmith at that time if you count all the research fellows! But there was a financial man and his secretary, and there was a secretary and so forth, and there is no earthly reason why hospitals can't be run with considerably less administrative staff than there are today. So I think that is a very sad commentary, but still I remain very optimistic.

WB And, what in your own personal life in anaesthesia has given you the most satisfaction? In your own personal work you've achieved a great many things.

KS Well I think the, the teaching has been the main thing. Although I, I know I was a dreaded examiner! I used to probe people very strongly in order to find out what they knew and what they didn't know; I felt this was far better than looking at the colour of the tie and then passing or not passing. There was a story that a very black chap came in, and his name actually was Shakespeare, William Shakespeare, and this poor fellow was green. And apparently he came in and he said to the man outside the door 'Who is your examiner?' and he said 'Dr Nunn.' And the chap passed out so they resuscitated him. And then he, he managed to say 'Well who is the other one?' and they said it was me, and they said they had to carry him out on a stretcher after that! I think that's an apocryphal story! But although I was a fairly diligent examiner shall we say I think that the... I did a tremendous amount of teaching, I mean I taught at the Faculty, I lectured everywhere in the country, and I enjoyed teaching. And I think I could teach because I couldn't understand things, and so I taught fairly simply and didactically. So I think that has been the satisfying thing. The international side has been wonderful. I mean, I ran four British Council courses from 1975 to '80 with about forty anaesthetists and rather than just bring in people to show them clinical anaesthesia, I aimed at the academics, the assistant, associate professor status. And we looked at three different departments and in between we called in at cathedrals and country houses and so forth, so they had a marvellous cultural tour as well as and academic tour. And those forty people have subsequently, you know, occupied all the major positions and it is nice to go and talk to them because it made enormous impact at the time. So I think that aspect, the international aspect has been very satisfying.

WB And also very influential, because...

KS Well, I don't do as much as Macintosh, you see, and Macintosh in the early days went round the world and taught everyone how to give anaesthetics. And I actually learnt how to use the Oxford vaporiser in Boston from an Argentinian who

had learned it from Macintosh in Buenos Aries. So, he did that. And his impact of course on the world is enormous because of, he invented the laryngoscope and he invented the Oxford vaporiser, and he trained the first anaesthetists. So no one can compete with that. But in a different way I think the tradition of Oxford has gone on. Alex Crampton Smith did it by creating the respiratory unit, and making a great impact on that and on university affairs. So people contributed in their own way, and Pierre Foëx is now doing it in the international field and the cardiovascular field. And I think these things... We are so lucky, you know, because we are advanced and because we've tackled it sensibly, because we haven't had to cope with the problem of nurse anaesthetists. And we've always managed to provide enough specialists to provide anaesthesia. I think we're in a very fortunate position to be able to give this kind of thing to the rest of the world.

WB Well, I think on that note we must thank you for all you've given to the world, and thank you very much indeed for coming and talking to us.

KS Thank you very much