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Sir Francis Avery Jones in interview with Sir Gordon Wolstenholme
Oxford, 5 March 1987

GW Avery, your medical career has had the appearance anyway of being a very consistent one. You have been one of the people, or the person, most associated with the establishment of gastroenterology as a speciality of its own. What were the origins of your medical career? I know you're a Suffolk man, or I think you are.

AJ Yes. I was born Wales, but I moved to East Anglia when I was three, and then I lived in Beccles on the Waveney until I was eighteen I suppose. Went to school there, Sir John Leman School, and then I had the opportunity of.... No, I'm sorry, when I left school I went into a bank.

GW Really?

AJ My father was overseas, and he hadn't made up his mind about me. So a year later he did, and so I decided to take up medicine as he had done, and...

GW He was a…

AJ He was a doctor.

GW I hadn't realised he was.

AJ And he had qualified in Liverpool, and he wanted me to go there. And I said 'I'd like go to London, if you don't mind I'll try and get a scholarship at one of the London hospitals.' And I did that at Barts and I got the open scholarship, and that paid for my … my fees.

GW That was really rather remarkable if you hadn't had the preparation and hadn't had it in mind before.

AJ Well I, what I had done was to keep up with the scientific journals, the equivalent today being *New Scientist*.

GW So school must have given you remarkable grounding in...

AJ We had, I was at a remarkable school. It … it really, after the war the sons and daughters of the professional people all around, likewise the shopkeepers, all went to the school. I was in the sixth form with … sorry…

GW But when you were in the sixth form were you still doing a comprehensive group of subjects? I mean classics, languages, as well as some science?

AJ Very little classics. No, it was mainly English, science, mathematics, more on the science side.

GW Yes. And so your father must have been delighted that you… Were you an only son?

AJ No. I had a brother who also became a doctor, and a sister.

GW And anyhow, you come to Barts and you go through the whole of your Barts training. If I remember rightly you qualified both with the London degree and the conjoint in '34.

AJ In '34, that's right, yes.

GW And by '36 you'd got your London MD and your Membership [Membership of the Royal College of Physicians].

AJ No, I had a marvellous medical training. My house, my first house appointment was with the medical unit, with…

GW Who was that then?

AJ With Professor Fraser, Francis Fraser, Sir Francis Fraser for a short time, then Professor Witts[1] and then Professor Christie[2]. So I straddled three professors of medicine, each with different outlooks, different backgrounds and I was able to absorb their best…

GW All three very…

AJ …qualities.

GW …unusually very gifted people.

AJ Yes, and…

GW Yes. With Leslie Witts, was that…? You mentioned sometime as it were that this was partly where you began to…

AJ Oh I think it was…

GW …enter gastroenterology.

AJ …Leslie Witts that really started me off. He was a remarkable man, a delightful person, a very fine teacher and a very interested person, always curious about medical problems. And to sit at a tea table with him for instance, there was always something turning up which might lead on to a publication of a paper. I

[1] Professor Leslie John Witts.
[2] Professor Ronald V Christie.

remember his paper on the dangers of purgation. It started as a tea time conversation. And he had heard about Moynihan Grant[3], feeding patients with haematemesis with food, giving food. Moynihan Grant would wipe the blood from their lips they said and give them, give them meatballs! We didn't go as far as that; we gave them a modified the Moynihan Grant regime, with softish food and regular meals. But a very great contrast to the sips of water and ice to suck which had been the regime before that…

GW Or drip milk feeds and so on.

AJ And drip … and… Yes, and Witts took this up. I was his house physician and so I took a very special interest in these, in these patients, and I helped them in their recording. And by Jove they did better, they looked better, and their subsequent performance was far better. And I had no doubt that it really was the thing to do. And so when, during my next appointment as a junior assistant, I looked up the old records and studied what had been happening in the previous years. And I was flabbergasted at the number of quite young people who had died from what we can only assume was dehydration. That sounded very odd because this was a professorial unit, measuring all the urine outputs, they were keeping good records. And yet the CRF [chronic renal failure] blood rolls, which had been done incidentally post mortem for another study, I was able to correlate you see with the clinical state. And I found that these young patients with haematemesis were dying of extrarenal uraemia, and once you could get rid of those cases down went your mortality. So I was able to, so that showed how one can reduce mortality by just cutting out the, cutting out the dehydration. And I remember when I published that paper I had a delightful card from Tommy Horder, saying 'I'd always been puzzled by this and there you, there you've explained it.' And so that set me interested in fluid balance. And that was another interest I'd picked up at Barts, the salt and fluid balance. And on the first day of the war we, I published a paper with Clifford Naunton Morgan.

GW Oh yes? Hmm.

AJ And we, and again looking back found so many patients had been drowned with too much salt, with so-called physiological saline.

GW Yes.

AJ Was provided with far too much salt, so they'd got diverticulitis(?), and vicious circle vomiting, and sadly died. So we suggested a one fifth normal saline as a routine, and that has gradually taken over. It's been taken over all round the world I think.

GW Yes. But it was a very slow business.

AJ Oh, very slow business indeed. But, it… Again it was, it showed the importance of simple physiological principles being applied correctly.

[3] Sir Francis is probably referring to Lord Berkeley Moynihan here.

GW It's a question of observation and measurement, and clinical control and not requiring more elaborate technology.

AJ Not a bit, no, no.

GW Yes. Very, very interesting. You've just already taken me up to the day the war broke out more or less. You were, were you already at the Central Middlesex by that time, or…?

AJ No … my, at the beginning of the war I went to (?) with George Graham. Now, George Graham and Reginald Vick the surgeon were detailed off to organise a thousand emergency beds at Coney Hatch(?)[4], and I went up with them with several other people. And we made a thousand beds by just transferring some of the four-thousand inmates into other parts of the hospital, and in no time we had these emergency beds, and then we began to transfer patients from Barts up there. And that was a great experience. I was very fond of George Graham.

GW Yes, I think most people were.

AJ He was a delightful person. He was always a little bit behind me, always just pushing me forward to the next appointment or lectureship or something like that. I used to take him out to Denham to play golf on Sundays sometimes. He was, he was a very keen golfer. And so that was a very interesting experience. Now, during that time I was thinking of going into the services, then an appointment, an advertisement turned up in the *BMJ* for a position interested in dietetics at Central Middlesex Hospital. I happened to see this by chance, and I put in the application after the closing time and to my astonishment I was appointed.

GW This was with Horace Joules?

AJ And that was… And Horace Joules was a great person, and had had the foresight to see, to realise that dietetics was an important part of a district general hospital. So he had appointed a dietician, and then he wanted a physician interested, and I had the ideal training from that … that professorial unit at Barts. So I applied for it, and having got that to my surprise Horace Joules sadly was taken ill, and I was, within three months I was in charge of the seven-hundred bed hospital, administratively.

GW Really?

AJ I was the medical director, and then after that at intervals I had to resume control. And so the Central Medical War Committee held me at the Central Middlesex, and I may say we had a pretty busy life there with a great deal of activity, bombing activity in north-west London.

GW Was that in a particular sector and was it still in anyway connected to Barts?

[4] Sir Francis might mean Coney Hill Hospital, Gloucestershire, here.

AJ It was… No, I was then in sector 10 I think it was, north-west, north-west sector. And that, I always thought that was a very good arrangement, the sector 10, with the Middlesex and Mary's at the apex going right out to Aylesbury, and so you had a transfer of patients and staff up and down. And that, I'm sorry they didn't go back to that after the war…

GW Yes indeed.

AJ …and it was certainly a good arrangement.

GW This is where Harold Boldero played quite a role, I think, didn't he…

AJ Enormous.

GW …in setting it up?

AJ An enormous role. And I was very fond of Harold. He really did a magnificent job, and after that Doctor Macaulay[5].

GW But we lost that opportunity didn't we to have that … that good marriage between the teaching hospitals and the districts? I mean yours was a very unusual step, to go to a district hospital, when you, when you were facing the normal sort of consultancy career, in academic life.

AJ Oh extremely unusual, yes. But...

GW But you made it in a way the thing to do.

AJ Yes, I realised I had the opportunity there which I wouldn't have had if I'd stayed in London. I'm sure Barts would not have developed a specialist department for some years. In fact they, it took them until 1960 I think to set one up. So it…

GW So the war, during the war period you were extremely busy obviously?

AJ I had a Czech assistant, and he and I boxed and coxed. And we had fifty beds and I dealt with all the haematemesis and transfusions and helped around the hospital. No, it was exciting times; we had a lot of activities as I said, and all that time I kept records. I kept records of the haematemesis, I kept records of the surgical cases that came my way and, so at the end of the war I had quite a volume of useful information about haematemesis, about ulcer. And so I made use I think of my wartime in that way, and that's shown up subsequently I think in the way I've for instance always had surgical patients on my ward. Throughout my entire time at Central I never had less that fifty per cent surgical patients in my ward, and I thoroughly enjoyed looking after the postoperative care. Surgeons were delighted and gave them extra beds. I was delighted because I had the postoperative situations of fluid balance and the pneumonias(?) and the ... all the ways in which one could improve postoperative care. And that was quite a main activity of mine for some years.

[5] Hugh Montago Cameron Macaulay.

GW But again most unusual…

AJ Most unusual.

GW …if not unique.

AJ I think it was.

GW I remember the, I was studying Allbutt[6] recently and he couldn't tolerate this division between medicine and surgery which he thought was absolutely not in the patients' interest, and surely you demonstrated that.

AJ Yes, yes. And of course I'd been ... I'd, I got drip transfusions going and so on which … which you'd helped to start.

GW Well, not very directly but I got deeply involved, yes.

AJ Deeply involved, yes.

GW That was with Marriott[7] and Kekwick[8] of course at the Middlesex.

AJ They were … I was much in contact with their work. In fact I gave a paper on that at the Association of Physicians.

GW At … in that time?

AJ At … in that, it must have been in that time, yes.

GW You…

AJ On haematemesis.

GW Yes. Going forward a little and just sticking at the moment to your own career, not so much the scientific side, but you also got a consultancy after the war at St Mark's, isn't that right, which you held for a very long time in…?

AJ Yes, now that again came from my interest in the postoperative care and fluid balance, and my work with Naunton Morgan. So I'd been called over to St Mark's from time to time to advise about fluid administration and postoperative care and then these surgeons… And it was essentially a surgical hospital, very much so. They had no physician particularly concerned with the problem of the gut. So they invited me to join their staff, and I joined them as an honorary consulting gastroenterologist, which I had been for many years! I was never officially on their staff.

[6] Thomas Clifford Allbutt.
[7] Hugh Leslie Marriott CBE.
[8] Alan Kekwick.

GW Really, never?

AJ But I was never on the payroll, shall we say. I was the one … perhaps the only person in London who had a, possibly with an honorary consulting appointment at that time. And that was superb, because it gave me access to the experience of the lower end of the bowel. I'd built up an outpatient department for ulcerative colitis and Crohn's disease, and...

GW Which was, tended to be totally separate from problems of the duodenal ulcer and so on, didn't it?

AJ Absolutely, yes. Early on I realised that I was in danger of becoming a specialist in duodenal ulcer. Well I realised in time that I must go down the bowel as well. So I began to take an interest in the colon and rectum. And the physicians ... sigmoidoscopy had been made possible by Lloyd-Davies[9], because he introduced the small bore – you remember Lloyd-Davies…?

GW Yes, I do indeed.

AJ …at the Middlesex? And he did a superb job in introducing that flexible sigmoidoscope, and so I made full use of that. It became almost a sort of routine examination. And yet the surgeons were still giving anaesthetics to do a sigmoidoscopy, and when I went over to Australia I remember the surgeons were quite upset with me because there I was demonstrating, a physician using a sigmoidoscope, when they always used a great big Boucher(?) instrument under general anaesthetic. No it was ... I very very much enjoyed my long experience at St Mark's. I built up this clinic, and then fortunately Lennard-Jones[10] took over from me and he's extended the work. And now there's a very substantial medical aspect to the hospital, and a centre of research on the medical side as well as the surgical side, and a centre of research on the postoperative care particularly in nutrition. They've got one of those units for enteral feeding, including one of their…

GW Yes, well now of course they have great complications as to what is being absorbed and so on.

AJ That's right. Yes, that's true. So that was a very interesting and valuable part of my career, very enjoyable.

GW There's one … you have mentioned this semi-flexible sigmoidoscope, but what about the other end, the semi-flexible and finally flexible gastroscope.

AJ Yes, that … yes, now that's very interesting. The … it wasn't that the sigmoidoscope was rigid, but it was a small bore, and with, and with optical illumination and so it...

GW It wasn't at all flexible.

[9] Oswald Vaughan Lloyd-Davies.
[10] John Edward Lennard-Jones.

AJ It wasn't flexible, but it was easier and safe. And then, it was 1934 actually, Harold Edwards and Harold Rogers(?) went to Germany and came back with a Wolf-Schindler semi-flexible sigmoidoscope. I rather think that Harold Edwards had to bring it through the customs with the, down his trouser, but that may be apocryphal. But anyhow Harold Rogers was working, I was working with him at the time at Barts, and so when he produced this semi-flexible gastroscope I hung around and made certain I held the head of the first patient, and in no time I was passing it myself. And it was a remarkable instrument, quite easy to pass and relatively non-invasive in the sense of discomfort to the patient, and gives you quite a lot of information, but rather limited.

GW It was quite disturbing as a student to see it being used!

AJ Yes ... oh was it? Yes, well, but then they hadn't, today of course you have such a different picture of…

GW Literally.

AJ …anaesthesia, of the intravenous medication. But that opened up you see, at once opened up access to the alimentary tract. You see, hitherto the gut had been impalpable, invisible and inaccessible. Then we began to get access. I was already, we were already getting better access at the bottom and now we were getting better access at the, at the top. So it took ... that really opened up a whole new picture and more than that it excited the interest of the younger generation, and we began to get the best of the younger physicians and surgeons interested in gastroenterology. And that was one of the important functions of the, of the semi-flexible sigmoidoscope, and that came into it's own particularly at the end of the war. By that time Hermon Taylor had somewhat modified and in some ways improved it, in other ways it wasn't quite so, it wasn't quite so safe. But anyhow it gave us much better access, and much greater interest, and we began to learn much more about ulcers and what went on in the stomach. Access has been a great, has been the secret I think of the rapid advance of gastroenterology, gaining access. Gaining access to the liver with, by liver puncture. And no one more than Sheila Sherlock has achieved that access and then built it up you see into the whole, all the different aspects of pathology and biochemistry, given us an entirely new picture of liver disease. And then the same thing happened with jejunal biopsy. Now Ian Wood in Australia had introduced gastric biopsy, and then Margot Shiner extended the principle down to the small intestine. And that at once not only opened up the histology but opened up the biochemistry, the immunology, all sorts of scientific aspects of the small intestinal work and enabled us to... It was, but you have an explosion of scientific activity.

GW Yes, I remember the enormous excitement of seeing these villi in…

AJ I know, it was quite a…

GW …health and disease or in sprue, in coeliac disease or whatever.

AJ It was quite incredible, yes, yes.

GW The chance, it was so dramatic, beyond ones imagination until you could actually see it. There's one other appointment I'd just like to mention. You became consultant to the Navy for many years. Was that as a general physician?

AJ No. Again I had been, and Gordon Gordon-Taylor, who I think you know.

GW Yes, my dear friend...

AJ And…

GW …and chief.

AJ …I had a very great regard for him. And with his interest in haematemesis and many other aspects of surgery I had come in contact with him. And in fact I had been out to Australia with him in 1952, and Charlie Best and Gordon-Taylor and myself did a postgraduate week at Perth between us. And that was a marvellous experience for a young man like myself, at that time. Anyhow, as consultant, civil consultant to the Navy – in fact of course he'd been admiral in the war – he brought me in as a consulting, civil consultant gastroenterologist. And then for years I would have the difficult and (?) patients, cases of gastroenterology, of gastroenterological interest, sent up to me even by helicopter from Haslar. And I would go down there, take part in their discussions and their conferences.

GW It was a very lively place, there were a lot of very…

AJ Very lively, yes.

GW …bright people at that time.

AJ And more than that it has been so ever since, and some of the most important gastroenterological studies on man – not on animals, on man – has been done at Haslar in recent years. And Milton-Thompson[11] has much to be proud about for work being done there. And it's, and that work is continuing and my, and my colleague George Misiewicz[12] has been, done a lot of work down there too. So it's been a, in a sense almost an annex of the work that we were doing at Central Middlesex.

GW In a sense it was a sort of harmonic to your…

AJ Yes it was, yes.

GW …to your main thrust in you career?

AJ Yes, yes. And of course the naval contact, the Navy does things so well, their standards are so high and it was a pleasure always to go down there to attend a meeting or social occasion. No, I felt very honoured and privileged to hold that

[11] Godfrey James Milton-Thompson.
[12] Jerzy Jacek Misiewicz.

appointment and I am still emeritus consultant in gastroenterology, which I appreciate very much.

GW Yes. You have mentioned to me, on the way here, the way in which you got support for your research and I think it would be interesting to say a word or two about your application to the Nuffield Foundation and what came of that, and subsequently of your...

AJ Yes I … yes I'd, I had come in contact with Nuffield because I began to get Australian fellows coming over to work in my department, supported on a Nuffield grant. So that brought me in touch with Farrer-Brown[13], the director at that time, and so I think he took a special interest in what was going on. So I, first of all they sent me out to Australia, and I...

GW A travelling professorship or something...

AJ A travelling fellowship for two months. I had spent a month in Australia, six weeks in Australia, and then two weeks in South India where I went hunting for duodenal ulcers in South India, and that was very interesting. Anyhow, with that contact with Nuffield I went back a few years later and said I'd like to develop a department of gastroenterology with some laboratory space. At that time the only laboratory space I had was where you tested the urines on the ward. That wasn't quite enough, and I wanted to get a smoke drum for instance down and so on. And so Nuffield gave me six thousand pounds and that enabled me to build a laboratory on a flat roof, and that was later (?) extended with another grant, and also another grant to build up the dietetic department for the dieticians, and so... No, they did very good work like that and in fact I'm very grateful to medical foundations in general, including the Ciba Foundation and the Wellcome of course, and many many others.

GW And I think you said that this led, this led to MRC support in a way which might not have come otherwise.

AJ That's true, and I think having got laboratory space… And it was quite generous space, I think I had three-thousand square feet, in those days quite a lot, and more than that I had a lot of records. I had a lot of reprints. I had a big reprint library, I got a part-time librarian to help with it. And that had all, and then I'd had Richard Doll working with me on the study of occupational, the study of gastric and duodenal ulcer, and that again brought me in contact with the MRC. So I had established a link, and then Harold Himsworth invited me to go and give one of their midday talks…

GW Oh yes.

AJ …you may remember. So I told them about the potential of gastroenterology, as I saw it. The emerging potential with better access, the need to get to work and study the symptoms, the mechanisms of symptoms as well as the causes, and the need for a department. And so they set up an MRC Gastroenterological Unit with Dr Tom

[13] Leslie Farrer-Brown.

Rowlands[14] as the first director, in fact the only director. And he did great work. He organised a team around him and focused down on many of the problems of ulcer, many of the problems of the mechanism of symptoms, of the mechanism of the … we had a radio pill for instance, and studying the movement of the gut. Clinical, basic clinical work. Not animal work but clinical work which was very badly needed. And we attracted some of the physiologists like Connell[15], like Connell to come in and work with us and … instead of working with the animals. And that I think was a very good move. No, the MRC gave us great support and for many years, and then when Tom Rowlands retired the department as is the custom lapsed with him, but ever since then we've had continuing support from the MRC.

GW But a great deal of work had been done.

AJ And we'd got the foundations and … and that work has continued. And they've now I think to some extent, a large extent, switched over to the nutrition problem as well as the gastroenterological and particularly the ulcer problems. And David Silk and George Misiewicz have both done and are both doing excellent work. In 1960, no 1970, 1970, Tom Rowlands agreed to getting a big project going on dietary fibre. So we set up a research team, and we had Cummings[16] and James(?)[17] and Leeds[18] and others, who all have their own departments now. And this provided us with the, some of the scientific basis for dietary fibre and its effect on the gut, and that, which opened up another big field. The field is continuing, rapidly. So, yes, I think the MRC made a very valuable contribution and, to gastroenterology; timely and appropriate.

GW And of course it was taken up in many places after that. You didn't need to keep a particular…

AJ Oh no, no. Yes after, no, after that it had exploded, you see, all around the country and to Scotland, and in fact all the big centres had their departments of gastroenterology. So … but no, the way had been shown.

GW You mentioned just by the way so to speak a few minutes ago this searching in Southern India for the duodenal ulcer. I'm intrigued because I remember that in Ethiopia where I was working at one time the poor people got a great deal of ulceration but the middle class and upper class, not that the figures were very great of those people, very, very rarely suffered from it. We thought at the time it was due to very highly spiced food on, in people who were deficient in protein, so the lining of the stomach or whatever was perhaps weakened or defective. What was your, what were you looking for in India?

AJ Well, I noted with great interest that the fisher folk on the coast were virtually immune, but a few miles inland with the villagers, they had a high instance of stenosing duodenal ulcer particularly. Not so much haemorrhage, although of course

[14] Dr Avery Jones must be referring to Eirwyn Norman Rowlands here.
[15] Alastair McCrae Connell.
[16] John Hedley Cummings.
[17] Dr Avery Jones might be referring to David John Jenkins here.
[18] Anthony Richard Leeds.

the haemorrhages wouldn't have been brought in to the hospitals. But it suggested that there was a dietary factor in ulcer. I was never enthusiastic about the spicy story, and in fact ulcers will heal with spicy, with a spicy regime. Spices stimulate mucous secretion, and mucous you see is a tremendous protection. It's always been one of my interests, mucous protection of the alimentary tract, and, but, and today you see there's increasing evidence that peptic ulcer is one of the diseases in which the diet plays a major role, and there's a lot of work going on now. Parts of South India where ulcer is prevalent, others where it isn't, and that, and that possibly can be related to some of the local vegetables… And I think green vegetables and pulses play a protective role, and I think the concept of protective roles is an important one which hasn't been fully worked out.

GW This geographical if we may call it so pathology, or least a locational pathology, never seems to have been explored as much as one would have imagined because there such very marked differences of incidence of various conditions.

AJ That's true.

GW You feel that they must be telling us something.

AJ Yes. And they are telling you something, if you listen. And, but sometimes … I went all the way out to Changsha(?) in 1957, and there you see they didn't have diverticulosis, they didn't have pernicious anaemia, several things they didn't have. Immune diseases were less prevalent. And again I think it's the Chinese dietary regime which is quite different from ours.

GW A lot of oesophageal cancer in some of the...

AJ Yes. And again in other parts of the world too. And undoubtedly there are factors, local factors, food storage more particularly I think, which predispose to cancer, and sometimes you will get then a cocarcinogen – the alcohol of course in some places is a cocarcinogen – and then you'll get a, get a high incidence. But no, it is a field that ... and of course Richard Doll is a player and has done so so successfully, but there's still a lot of work to be done on the geographical variations in disease. And in not only alimentary but in the cardiovascular system too, which again I think there's a very big dietary factor.

GW You had a department already established at the Central Middlesex when you went there of dietetics which Horace Joules had done. Was there any difficulty in, so to speak, co-operating with that or was it a natural marriage?

AJ Oh, perfectly natural. No … no, I was always very grateful to my dieticians for the ... mind you I think the diet, the regimes which we used in those days are probably no longer so necessary.

GW But there wasn't any friction or difficulty of demarcation disputes so to speak?

AJ No, I don't think so, no. And it was an enormous help in running clinics and diabetic clinics. I looked after the diabetics at that time and the obesities and so on.

Oh no, it was a great help and I am delighted and honoured to be an honorary fellow of the Dietetic Association.

GW Oh yes, oh yes. You … you had just been celebrating this great golden jubilee of this Society of Gastroenterology, and you have been in on it so to speak from the first day. It would be interesting to have something here on the record of Arthur Hurst and the first meeting and…

AJ Yes, well thank you. Yes, I have been, and that was fifty years ago, [it was] our golden jubilee, and I was privileged to go to the first meeting of the...

GW It was a club then, wasn't it?

AJ It was a club, the Gastroenterology Club with Arthur Hurst – he was knighted that year, Sir Arthur Hurst – as the president. And in fact I spoke in the discussion at the meeting. I'd been invited there by my chief, Professor Witts.

GW Really?

AJ And Professor Witts was always very good at stimulating interest in young people, young people, and that was one way he did it. And, no, I was enormously interested and pleased to go to that meeting.

GW Where was it held?

AJ That was held at the Medical Society of London, as later meetings were too. And Arthur Hurst was the founder, and he inspired interest in gastroenterology. That again is a very interesting story. He was a Guy's graduate who went to Oxford for his clinical, therefore his … it was the other way round, he was at Oxford then he went to Guy's. And then when he … he got a Radcliffe Travelling Fellowship, and that took him to various places on the continent and to Boston. And there he saw Cannon[19], studying the motility, the movement of the cat intestine, and this he found enormously interesting. His interest in x-rays had actually been stimulated as a schoolboy.

GW That was using barium and...

AJ That was using barium. He'd seen at his school, Manchester Grammar School, his housemaster demonstrating the very early Roentgen rays[20], using the arm of his, of the housemaster's wife, and that again had fired his interest. So he picked that up in Boston with the cat studies, came back to Guy's where they had a primitive x-ray machine in the electrical department. So he was able to get use of that, got student volunteers, and started to study the effect of barium transit in the alimentary tract and wrote a superb book on constipation and like(?) diseases and on the sensitivity of the gut.[21] He really did quite outstanding good work and of course that stimulated interest

[19] Walter Cannon.
[20] Discovered by Wilhelm Conrad Roentgen (1845-1923). Roentgen called these rays 'x-rays' because of their unknown nature. He was awarded the first Nobel Prize in Physics for this discovery in 1901.
[21] Arthur Hurst, *Constipation and allied intestinal disorders*, London: H. Froude: Hodder & Stoughton, 1909.

in a number of people. Not too many. But gastroenterology was a very dull disease at that time, there were no physical signs and people didn't, students pushed it aside. But there was a handful, in fact about thirty to forty physicians up and down the country, who were stimulated by Arthur Hurst. And then in 1934, '37, he brought them together into this, into this club and then thereafter they had this annual meeting. And the idea was, just like the Association of Physicians, to stimulate excellence and friendship, and this he did most successfully. It started with people outside London; it wasn't just a London organisation as some people have said. No it, we had people from Birmingham – Lionel Hardy, from Sheffield, from Newcastle, from Edinburgh. And at the first meeting they had a pathologist and a surgeon was elected. So it started off as a multi-disciplinary society, and now it's built up to a bi-annual meetings with ... oh, a thousand people attending and…

GW And with a lot of attention from abroad.

AJ A lot of attention from abroad, and really making an impact and... But the credit goes to Arthur Hurst; the enormous stimulus he gave and the way he applied new science to gastroenterology. That again has been the secret of progress, you see, ever since. Every time a new science, new technologies like fibre optics comes on the scene, where it's picked up and we get better access to the gut. And I think that's why gastroenterology has been such an interesting, exciting subject; that we have had all these new technologies applied so quickly. And that has meant good links between the pre-science departments and the clinical science. Now those take a bit of cultivating, and I think that there, maybe gastroenterologists have done that rather better than others. And certainly in this instance with Newcastle, Harper's[22] work, the links there with the clinical side were good. And there are other examples round the country.

GW And also of course the link between disciplines. I mean there's hardly a medical discipline which can't contribute to study of the gut.

AJ Absolutely. No, the training of the gastroenterologist is a general physician who then develops a special interest. There isn't a single part of the body – the lungs, the skin, anywhere, the heart – where there isn't a contact with the alimentary tract. And I think that's … the skin for instance, you diagnose a lot of gut conditions just by looking at the skin. And … so no, it's very important to realise that we are just one of the systems of the body and we must work together.

GW I think Arthur Hurst was a neurologist wasn't he?

AJ In fact Arthur Hurst was appointed as a neurologist. On his Radcliffe travelling fellowship he went to Paris I think for six months, and studied under Charcot I think, and then when he came back to Guy's a little later he was appointed neurologist. In a sense he justified that by his work on shell-shock and what-not in the First World War, and did some excellent studies then … and on hysteria and so on. Yes, he…

[22] Alfred Alexander Harper.

GW Well it's not stretching things very far, I mean after all...

AJ Not a bit, not a bit. In fact, in fact you see the links between the brain and the gut today, I mean the gut has all these … these cells, nerve cells along the gut, all the peptides being produced, and the links between the brain and the gut are very, very close. I quite agree.

GW The hormonal side was very slow in developing, I think, I mean after the first hormones were identified, and gastric hormones and so on. But slowly that has become a major field in itself.

AJ It's, it was very surprising to find that the gut is in fact the largest endocrine organ in the body. And we had no concept of it, and yet that has … and that's led to the identification of a number of rare conditions, Zollinger-Ellison syndrome for instance. It's led to the better appreciation, but not the final answers, to the disturbed control of the, of the gut, the irritable bowel syndrome, the troubled gut. And, no, it's been a very interesting and exciting field, with more dividends to come from that. But so far the practical application has been somewhat limited, but I see that there are more dividends coming.

GW Oh surely, yes.

AJ No, you're quite right.

GW There's, you had these technological changes which, I mean the x-rays, the gastroscopes, the sigmoidoscopes, the hormonal side and so on and many other things that came to contribute. How do you see things going in the future, I mean with regard to further access to the gut?

AJ I think the access side is probably fairly well developed now, with the utilisation of the fibreoptic, fibreoptics and the needles. And now of course the sonics, the…

GW Yes, that was really what I was…

AJ …that's the other...

GW …aiming at…

AJ …the other big, the ultrasonic…

GW I was wondering how far that was … yes.

AJ And I think that has certainly extended the, our information about ... and of course made medicine so much less invasive. And that's so pleasing that tests are no longer traumatic, to scan a patient and see a lump in the pancreas, no discomfort to speak of to the patient.

GW That's a wonderful…

AJ And it's a wonderful, wonderful development you see in terms of the patient, which from my point of view has always been a very important asset. No I think the, in access, no I think apart from that I think that's the...

GW But on there dietary side I imagine that there's still a good deal to be done.

AJ I think there's a lot. Every ten years or so new concepts are introduced. We've had all sorts of exciting new concepts which have certainly turned up, and some of the ones which haven't entirely worked out yet I think is the nutrition one. Yes, and I think the concept that Surgeon Captain Cleave[23] put up of the... You see he started off using bran to treat constipation on the King George V battleship. That worked very well, and there was almost a mutiny when he didn't bring back a, a sack of bran back, I remember on one occasion. But that, he didn't stop at that; it made him think. He said 'Now what happens when you take the bran out of the flour, what is the effect of the depleted flour on health?' And he posed that question and then set about answering it, and came up with the very unexpected results of showing or suggesting that many of the current diseases are in fact, can be traced back to the refinement of basic food like flour, and also rice too. And the difference in the incidence of peptic ulcer in prisoner of war camps, for instance, in Japan was partly related to the, whether they had white rice or brown rice. Now brown rice was protective, and there was a protective substance in the bran. Unfortunately with rice it's rather unstable, and then it becomes toxic. In wheat it's much more stable, even then I think it's better to stabilise it. And so the ... and that opened up a very big field of enquiry in the effect of a) the fibre and b) the lack of the refinement of food. Now the positive side, the fibre side has been greatly emphasised and rightly so by Burkitt[24] and Trowell[25], who've done great work in linking their experience in Africa up with the English scene. And, but the emphasis was I think perhaps too much just on the fibre side and not enough on the effects of depleting the basic cellulose...

GW It was counterproductive wasn't it really to have, to emphasise the fibre side quite so much?

AJ It was, it… Yes it, I think the balance is, I think the pendulum is swinging now but it's taking some time. And, but I see that this is a field which will certainly influence I think the cardiologists for instance, I'm sure that there are protective factors there in the, in the wheat and also in green vegetables, and I don't think they've... It's, that's been known of course by Hugh Sinclair for years and years, thirty years. Excellent paper, 1956 I remember. And … no I think the essential fatty acids are a clue which still remains to be worked out, and once it's worked out I think we shall find that there's much greater control, much better preventive medicine in the future.

GW For many conditions?

[23] Thomas Latimer Cleave.
[24] Denis Parsons Burkitt.
[25] Hubert Carey Trowell.

AJ Not just for the gut but … ulcer certainly, but I suspect the coronary heart disease will be another one too, and probably others too.

GW We've spent most of this time quite naturally on gastroenterology, but you have had some parallel careers going at the same time I think?

AJ Yes, I thank you. I have always had a, taken a view that one shouldn't just focus entirely on the wards and outpatients. You should see what's going on around the hospital. And when I went to the Central Middlesex I linked up with the Invalid Kitchens of London in Acton, a small organisation. I helped them to reorganise. I got them to provide dietary advice and help for the local factories. They appointed a dietician. And they were the forerunners of Meals on Wheels. They lapsed after the war, but they, but their idea survived to this day.

GW Tremendously valuable.

AJ Tremendous. And then after that, that brought me in touch with Sir Jack Drummond and I got, I was taken on to the catering and diet committee of King Edward's Hospital Fund and I was there for twenty-five years. We had the assignment of upgrading, of modernising in those days, the kitchens of London's hospitals. And that, and I used to, we had a school of catering, a dietary service, advisory service, direct grants. And I was directly involved in that for a long time. And then I moved on to other aspects of the King's Fund, the King's Fund centre for instance, and finally on to the management committee. And that gave me a tremendous field of interest. One could put in ideas and see them developed with considerable money behind I might add.

GW And in many cases these were things which were very largely ignored or taken for granted, and they needed the attention and the study.

AJ Well, they did. They were, there was no emotional appeal of medical research, and not a penny was spent on medical research, but they did spend money on making, helping hospitals to make the best use of their resources. They were concerned with efficiency, effectiveness and...

GW And standards.

AJ And standards, and standards, yes, and they, by Jove the standards were very high. No, they made a great contribution and I was delighted to see that they had their ninetieth birthday, celebrated with a *Times* supplement, just recently. I've always felt that they didn't do enough to give themselves publicity, but I think that message has now been learnt.

GW I think perhaps they've been partly victims of their title. I've nothing against Edward VII but I mean it dates it; it makes it look as if it was some old charity which is surviving.

AJ Well, it's quite true. The King's Fund is the popular term. But, no, charity of course is a word I never use if I can help it; cold, impersonal. No, I prefer benevolence or … and I think charity is a legal term these days.

GW Even in the Bible it's been changed I think.

AJ Well I'm not sure if I approve of that. I prefer the old...

GW Avery, I have to complete this interview. I've been utterly delighted to be able to talk to you like this and I'm sure that the College will be as grateful as I am that you made, you put this on record. Thank you very much indeed.

AJ Thank you very much.