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Professor Basil Hetzel in interview with Dr Max Blythe
Sydney, Australia 9 September 1993, Interview I

MB Basil, you were born in London in the 1920s, a child of the 1920s, to very interesting parents

BH That's right

MB with Australian history.

BH Australian parents. My father graduated in medicine at the end of 1920, had a year in residence in Adelaide, and then set off for the big smoke in London. He was fortunate. His wife had a rich uncle who helped in support and he managed to get a job as a junior anaesthetist at University College Hospital and, from that, he finished up on the academic unit.

MB That was a great place to be, at UCH?

BH It was a great time then. It was a centre – the Rockefeller endowment for the first clinical unit in London, university clinical unit, and there were people coming from all over the United States and Europe spending varying periods of time and through that, my father got to know many people who subsequently became senior academics in the United States and the United Kingdom so, he also had the opportunity of working with Charles Harrington. Charles Harrington first synthesised thyroxine. It had earlier been isolated by Kendal, 1914

MB Nice bit of continuity with your story?

BH well, that's right. You could say I was born in the shadow of the thyroid, almost, because he is acknowledged in one of the papers, Harrington's papers, you see, as assisting in the work, so, yes

MB That's terrific, born in London in that set of terrific circumstances but, to strongly Australian parents?

BH That's right.

MB Tell me a bit about the background of those parents, and about the parents themselves?

BH Well, my mother was of Scottish descent, her name was Watt and I was brought up in the belief that I was a direct descendent of James Watt which I exploded

when I was in Glasgow, because James Watt never had a son. He had two daughters and, therefore, nobody named Watt was directly descended from James Watt which is rather a sad revelation but, my father came from the Barossa migration. My name is a common name in Lorraine, Alsace Lorraine, and devout Lutherans they were, who were not happy in Catholic France, heard that the Hapsburg empire was wanting farmers with the – following the conquest of the Turk by Prince Eugene – and they took barges down the Danube, and some went north to Silesia and some went south to the Danube areas, Hungary, what is now Yugoslavia and Romania so, they were devout Lutherans and farming in Silesia. But then, Silesia was annexed from Marie-Therese by Frederick the Great and became a Prussian province and the Prussian kings felt that all subjects should be of the same religion as they were, named Reformed, so they fell out with the Reformed Emperor, and they were devout Lutherans, they wished to worship the way they felt was correct and proper, and they decided they would migrate. Some went to Russia, some went to the United States and some went to Australia, and my forbear, my great-grandfather, Carl Hetzel, came to Australia to Adelaide in 1847. There'd been a financier from England, a man from Plymouth, named George Fyfe Angus, who had taken an interest in these Lutheran refugees, because they were denied passports for two years and went bankrupt while they were waiting for a passage, and he – one of the pastors went to see Angus – and he was interested and he supported them. So, they were able to migrate. He saw the importance of farmers in the new colony of South Australia which he had a special interest in, and they came and became very important in the life of the State and very important in the wine industry, because they had grapes in Alsace, they had grapes in Silesia and they brought grapes, of course, with them to Australia. So, that's really the beginning of the wine industry in Australia which, of course, has become so important.

MB Barossa Valley is important now.

BH That's right, that's right. It produces, I think, about seventy per cent (70%) of the wine in Australia, and my great-grandfather never learnt to speak English. He had quite a large family who grew up to adult life, four daughters and four sons, and the youngest son was my grandfather who took over the family property, just out of Tununda, it's a well-known Barossa town, Hallett Valley, and my grandfather had a cheese factory and did pretty well but wanted, like his brothers, to go further north to take up land, new land, and my grandmother, who was of English background, her name was Martin, it was Suffolk background, said "No. These boys must get an education". So, they moved to the provincial town where there was a high school and, through that, my father went to high school

BH Which town was that?

BH Gorla, a town named after one of the governors, the early governors, in South Australia. My father received encouragement from the school-master who said "You ought to go on to university", and so he did. He won a scholarship to the university and graduated in medicine at the end of 1920.

MB Which university medical school did he

BH This is the University of Adelaide, which was established along with Melbourne and Sydney. The University of Aelaide was established in 1874, Sydney and Melbourne were a bit before that, of course, but had a very good clinical teaching tradition which, of course, my father benefited from first. Still in my time, a high standard of medical profession

MB I'm just reflecting on that important decision of grandmother to have that education?

BH Yes, well, my father never forgot this. He looked – the family – his grandfather and his father fell on, in the depression, almost destroyed his savings which were invested in property. Nobody could afford to pay rent, you see. We're talking about the early thirties. I can remember it quite clearly, the sort of depressive caul on the family and my father had to, of course, support his parents, and his younger sister, over quite a period because of these circumstances. Exactly. I was born in '22. I'm old enough to remember the depression and what it meant to this family. My father's youngest sister is still alive, at the age of 90, she's now in frail health but, she has still a vivid picture of the situation.

MB What days!

BH That's right.

MB Basil, we've talked about your father and we've got an impression of him being a distinguished medical figure, a distinguished physician, a career which was going to grow and he was eventually going to be involved in your teaching as a don in your own medical school but, perhaps, we could just put mother in at this stage, who was just as important.

BH Exactly. My mother was a perfect foil for my father who – she earthed him in a way that is often necessary and, of course, held the family together and had a good store of common-sense, which was needed.

MB Classical formula.

BH Exactly, exactly. A very loving mother, very fortunate – I had a younger brother who became a cardiologist, very well-known cardiologist in Adelaide, and there we were, both did medicine. So, my father did well in London and was headed for an academic career really, and then he developed tuberculosis. He was a country boy, of course, in London, got infected, developed TB and had to go to Switzerland but, things did not settle down, and he came to Australia on a holiday and was advised he probably ought to stay in Australia and not go back to the English environment, which he decided to do. He had a family to support and – but, it was a very big

disappointment to him, and he indeed tried to keep up his sort of academic connections and was a candidate for a chair of medicine here in Sydney in the early thirties which went to a man from Glasgow, the sort of person you would expect to get the job. There were very few opportunities in academic clinical medicine in the thirties in Australia, virtually none. There was only one chair of medicine and that was here. So, he went into general practice first, then he was in specialist practice as a physician and very much respected as a teacher at the Royal Adelaide Hospital, an honorary, as they were, honorary physicians in those days, and had a continued long period as a clinical teacher until he retired from the hospital in 1957. He was very involved with the university on the university council, on the faculty, and Dean of the Faculty in the fifties when the expansion occurred and the first clinical professors were appointed and the school became more adequately staffed, along the lines that, of course, continue today. So, he had great influence. He was a man of vision and he had great influence and, I think, in a way he became very – I think, appreciated the opportunities he had and had his rewards

MB It's nice to have your biographical sketch of him because I think it's nice to have him in the College of Physicians' records in that way recalled

BH Exactly.

MB He was somebody you got close to?

BH Oh yes, yes. He was

MB Did you talk medical issues through with him in detail?

BH Oh yes, he was very much, I think, a very human person and was respected as a good human doctor, as well as being what might be termed technically, competent. He had a good human touch and was, of course, in practice over a very long period so, there are still people that I meet who knew him and remember him with great affection. So, that he had – he was an able person with good human qualities, and I was fortunate to have him as a father. He was a somewhat demanding father. He was very anxious that I pursue an academic career as he had not been able to do and I was early sort of influenced in the direction of thinking in terms of medical research as the great thing to do with a medical career, and there was no doubt in my mind about going into medicine

MB So, it was early, that was there very early?

MB Oh yes, this would be in my teens, you see.

MB And the school you went to, St. Peter's, I believe, was a

BH Well, he was – that's right

MB a powerful school in motivating you in academic strengths?

BH that's right. I was at a smaller independent school where the headmaster was his former schoolmaster from Gorla High School but then, he recognised or considered that it was too small, there was not enough academic

MB That was King's?

BH That was King's College

MB And then you moved to St. Peter's?

BH Then to St. Peter's which is – then was – a leading academic school and a lot of competition and I can see that this did benefit me, to have that sort of challenge, and I really learnt to work hard in that final year to get an open scholarship at the university which, in a sense, has remained.

MB Never got away from that strong working policy. It's still there, isn't it?

BH I'm afraid so! One of my sons says he is determined not to be like me but, every month that goes by, he seems to be more like me.

MB Is there a strong Lutheran background in there as well?

BH He's a scientist actually, he's not in the medical – but, he's a scientist. Animal genetics is his field and he's well-established in that field, but has worked very hard.

MB Basil, at this stage, we get you to medical school in Adelaide, and university.

BH That's right.

MB Can you tell us about those days?

BH These are the forties. I entered the medical school in 1940 and, of course, War broke out in September '39. We were a reserved occupation and I went through on a shortened medical course. I got – had – really a very, I think, happy period as a student. I was in the student Christian Movement in the university which really, looking back, provided me with, in fact, a liberal education. I'd been interested in English and History at school. I managed to get the prize of head of the school in English in my last year but, I was also inclined to religion and have always accepted a religious dimension and, through the student Christian Movement, I became a committed Christian and this has been an important influence throughout my life, and I look back with gratitude, not only for that, but for the broad sort of education that balanced the somewhat narrow aspects of medical education. So, that I had these – a very happy time as a student. I met my wife as a student. We were married in 1946 but, before that, I had to come to terms with tuberculosis.

MB You, also?

BH Yes, I had it. Yes. I had – I was a resident at the Royal Adelaide Hospital after graduation to have – haemostasis, coughing up blood – and I had a lesion and I had to be off for fifteen months with a pneumothorax which also caused complications, and it was a pretty difficult time ...

MB It must have been horrendous.

BH but, I got back to work finally. I took a job at the mental hospital in the bad old days – I know what the old mental hospitals are like – to earn a living so that I could get married, had a wonderful wife, Helen, and then I proceeded to train as a physician, took my membership of the Australasian College in '49, also managed to complete a MD thesis in '49 on the Applications of Clinical Biochemistry to Medicine. So, I was – well, in a sense – able to proceed fairly quickly with academic qualifications. Had a period in research. I got very interested in stress. Endocrinology was my interest and stress, particularly the adrenal cortex for a start which – ideas about stress related to disease, I was interested in, and did a study on the adrenal cortex and hypertension which was a new area. It's been – such a study has been done many times since

MB Was this in New York or did it start before?

BH It started before. I started this in Adelaide and then, I was able to go to New York on a Fulbright, very fortunate. These were the early days of the Fulbright programme. I was able to do – had supplementary travel support – supplementary support to take my family as well, and we had three years in New York

MB It was a magical option ...

BH as a research fellow at New York Hospital, Cornell Medical School, which was one of the leading medical centres in the country, and one was exposed to this extremely stimulating environment of the University Medical Centre at that time. I think it reached its peak, really, in the fifties and I was – took up – joined a research group that was looking at stress in various systems of the body, stress in relation to the stomach and the colon and the skin and the nose, and I took up the endocrine aspects, the adrenal cortex, metabolism and thyroid function, during emotional stress. Spontaneous stress and sometimes stress interviews, what we call – where you talk about a topic that causes some emotional disturbance under more or less experimental conditions and, I believe, I was the first to show that there was an increase in output of the adrenal cortex with stress, emotional stress, in man. This, of course, had been shown in animals but, it hadn't been shown in man and, of course, that's one of the things that stress does in the body that has effects on the immune system and all sorts of other effects as a result of the increase in adrenal cortical

MB Earlier, you'd published on cortical steroid output

BH yes, yes. That was published in '55 and, after that, I went on to London and had a period in endocrinology in the department at St. Thomas's Hospital and I had the transition from an American, very much with-it institution, to a conservative London hospital, which was something of a culture shock.

MB I mean, you found St. Thomas's a very satisfying place to be in?

BH It was very good as a compliment to what I'd been doing in the US. I worked in the Endocrine Clinic at New York Hospital one day a week – one morning a week – but, I concentrated on endocrinology and really learnt it properly, so that I had this as a sort of specialist area when I returned to Australia at the beginning of '56. These were early days and there were very few endocrinologists around and I was, in a sense, the first specialist endocrinologist in Adelaide, as a result of that. I continued to work on stress and the hormone interactions during the fifties, particularly interested in the thyroid because of the involvement of thyroid and stress, and there was some evidence that there was another thyroid hormone which I pursued, without success, for some time, but led me into more fundamental work on the thyroid, and I had a research fellow, biochemical background, who really did a very good job and we developed, through the sixties, a strong interest in the thyroid. I selected the thyroid again – although I'd been more inclined to the adrenal originally – because it had more common – was more commonly affected. You had more patients with thyroid disease available for study, and I thought this would be wiser than taking up the more rarer

MB At this stage, I'll put into context, when you came back from London, you came to an appointment in Adelaide at the University

BH I was very fortunate to have a full-time appointment in the Department of Medicine. The professor had been appointed just three years before, a man named Hugh Robson, from Aberdeen, an Edinburgh graduate, wonderful man, who was a sort of wonderful leader at that time in Adelaide, and in Australia, in academic medicine, and I was really fitted in to develop a research programme. He was too involved with the general running of the department, medical politics, national medical politics and various other things that he was extremely capable ...

MB I think I met him subsequently at Sheffield University?

BH Yes

MB In England, as vice-chancellor?

BH Correct. And he finished up as vice-chancellor of Edinburgh, as a matter of fact, died quite young, died before he was 60, in Edinburgh after only three years. He went back – yes – very able, and a very – I was – we were together ten years in Adelaide and that was a wonderful period in which I had the opportunity to mature

and start a new medical unit – university medical unit – at a new teaching hospital, the Queen Elizabeth Hospital in Adelaide which opened in '59, and my beds were the first to take patients ...

MB A terrific opportunity, that?

BH Yes, it – young staff, keen young staff, and that was a very good ten years. I worked very hard. I had a wonderful wife, of course, five children. She was, I think, - in retrospect, one almost gives too much, and takes for granted, the support of a wife. One did in those days. And – but, I did put a lot into it. We developed this university medical unit, research, practice and teaching. I was interested in developing the whole life of the hospital, initiated the chaplaincy, for example, so that people – a broad dimension of care and support that people should have, and continued with the thyroid until – it was '63 that I saw the opportunity of going to Papua New Guinea to study iodine deficiency. I'd been asked to review some papers for the medical journal 'Australia' on a new method of correcting iodine deficiency, the injection of iodised oil. Now, this is a radio-opaque medium, Lipiadol, which is well-known in radiology and, of course, well known in medicine, showing up holes in the lung, particularly in the lung, and in New Guinea they had a very severe problem with goitre and the associated mental defect, in mountain villages. It's a bit like Switzerland in geography which also has a well-documented problem, the European alpine region, going back to the Middle Ages when the word 'cretin' was invented, as a corruption of 'cretean'. There was a chest physician in New Guinea who had the idea that this injection could be useful as a source of iodine because it was well-known it stayed in the body. It was iodine and a poppy seed oil, it was in an oily form and, you see, it was metabolised at the rate of oil, linoleic acid being one of the major constituents, and he said – one of his patients was the Director of Public Health who had chest disease and had a periodic bronchography with this dye, and he said to him one day "Why don't you use this stuff for people in the highlands because you can't get" – the normal method is salt, you see, iodised salt - "you can't get salt into the highlands, of course, it's very difficult to do, why don't you use an injection?" And so he said "O.K." He got a young doctor named Terry McCullett to carry out a control trial in – just in – the Huyan peninsular just out of Lei in the north part of the country and, indeed, he was able to show that this would prevent goitre three years later in a control trial, and I was asked to review these papers. The – and it was, obviously, very impressive work but, as so often happens, controversy – he, in spite of tramping around the highlands, giving these injections, he believed, on the basis of his reading and so on, that iodine deficiency had no relation to the goitre. This was still controversy at this stage and he made a celebrated – had a celebrated sentence which fired me. He said 'there was no reason – no more reason – to connect iodine deficiency with goitre than quinine deficiency with malaria'. And, here was I, sitting in a laboratory department in Adelaide with an interest in the thyroid and iodine. I thought, well we can do something about this!

MB What a seminal moment!

BH ... yes, you see, so I put up a plan – because they'd done purely field work, there'd been no laboratory work done – so, I put up a plan to do laboratory studies to see how – well, first of all, whether there was a severe iodine deficiency in New Guinea and secondly, how effective the oil was in correcting it. Well, I recruited a research fellow on special funds from the university, Ian Butfield, who went to New Guinea after training and did – was an excellent field officer and we – of course, I went myself – we established a link with some German missionaries in a little place called Boana just out of Lei, and were able to use this particular district for studies. They'd already had injections and we were able to determine the time of injection and determine how long the oil would be used in particular subjects and, within eighteen months, I was able to present to the International Thyroid Conference in Rome the details of these effects of the iodised oil showing, indeed, there was severe deficiency and it was corrected by the oil for – certainly then – for three years, and we subsequently showed four and a half years. A single injection would last that long. This is a 4 mill. So, that was really very exciting and then we realised that we had the opportunity of going further. There was – I mentioned there was controversy about goitre and iodine deficiency. There was also a lot of controversy about mental defect and iodine deficiency because the conditions of cretinism had declined spontaneously in Europe, in southern Europe, without an iodine programme. Even in cantons, in Switzerland, you see, where they hadn't used the iodised salt which, of course, was first introduced in Switzerland, they observed a decline in the cretinism as elsewhere in southern Europe so, there was a lot of scepticism as to whether there was any relation, you see, between the iodine deficiency and the mental defect and I realised we had the opportunity with iodised oil to set up a control trial to see whether, indeed, we could prevent the cretinism by correcting the deficiency. Well, we did – this was set up in '66 at the time of the first census in New Guinea. Alternate families were injected with iodised oil and saline, as originally with the goitre study. We worked very closely with the Public Health Department. They were very co-operative. Dr. Roy Scragg was the director and then, Dr. Peter Faroe, was seconded at my suggestion full-time to follow up this work. Well, he did a magnificent job. He's now a professor in England, he's a Professor of Community Health in Liverpool, University of Liverpool. He did a follow-up, double-blind. That is, he examined these infants, not knowing which treatment the mother had had, and he also had the job of, of course, recognising the condition much earlier than ever before in a, say, up to four year old child which – we developed criteria, milestones, classical motor milestones of walking and hearing. Deafness is a part of this syndrome, it's a terrible handicap. The classical condition is mental defect, deaf mutism and a diplegic, paralysis of the legs. Most awful handicap. And, of course, a lot of these people were to be seen in New Guinea at that time. Well, when the code was broken, it was quite clear that the cretins had disappeared from the treated group, except for some born to mothers who were already pregnant when the injection was given. In the control group, they continued to appear, so it was double-blind. It was quite clear that if the injection was given before pregnancy, you could prevent this condition. So, we published that in the 'Lancet' in February '71

MB That was a critical paper.

BH Yes, it was accepted as definitive in the editorial later because there had been all this controversy and it was recognised that what had happened in Switzerland, as it's better known now, was that they were getting iodine supplements. There was talk of iodine and their diet – with economic development – the diet would vary, diversify, so that they would get some iodine, and we showed this in New Guinea, that people that were living on the coast in the towns had much more iodine than the people in the highlands. So, this explained why the cretinism had, apparently, spontaneously declined and provided definitive evidence that, indeed, this was related to iodine deficiency during pregnancy, particularly in the first half of pregnancy, and indicated the condition could be prevented and, following that, I never lost interest in the problem, even though it was, of course, somewhat peripheral to my other activities for a number of years

MB You were going to extend it to foetal studies?

BH We did – I had the opportunity when I moved to CSRO, had a research institute, we

MB Perhaps you could just pinpoint that move a little bit more before we go on to that, Basil. How did that come about?

BH Well, the decision was made – the CSRO is, as you probably know, is the sort of government organisation for industrial and applied research, particularly related to industry, particularly related to agriculture and mining. This particular – the unit is the division, it's like an institute, of about one hundred staff, some are a little smaller, some are much bigger. There was, in Adelaide, a division, really, of animal nutrition that had done valuable pioneering work on trace element deficiencies in sheep in the south-east. First, I demonstrated cobalt, copper and zinc deficiencies in sheep and developed methods which are still used for correcting this, the so-called 'cobalt bullet'. After fifty years, a decision was made to transfer this division to human nutrition instead – move it from animal to human – so, there was some – a very important decision which recognised the lack of knowledge of human nutrition, the lack of awareness of the importance of diet and health and so, there was an advertisement for a medical graduate, preferably, to take charge and set it on a new course. I was, at that time, very busy at Monash and did not take an interest in the matter until rather later when I was acquainted with the fact that they apparently were having some difficulty in making an appointment and I suddenly thought well, maybe after eight years in Melbourne, I could move on to this and pursue the iodine interest, as well as the broader public health interests in Australia. Well, I was appointed and took up this job on the 1st January, 1976 and had ten very happy years. We developed a programme or – really on diet and health with special reference to cancer and heart disease, using an epidemiological approach. I had one of my former graduate students from Melbourne, Dr. Tony McMichael, come back from the US to set up an epidemiological unit, particularly interested in cancer epidemiology. We had research fellows. I used the model we were already familiar with from the university

Department of Medicine and we really became advocates for the importance of diet and health and the dietary guidelines as a public health issue, which was taken up all over the world in the late seventies and we – so, that was the major preoccupation but, I did have the opportunity of pursuing more fundamental studies in animal models. First of all, in the sheep and then in the marmoset monkey, to see more precisely the mechanisms involved in iodine deficiency in brain development, and I was very fortunate. I had a group of scientists who were experienced with the sheep from the trace element work and in a couple of years we'd produced a severely iodine deficient new-born lamb, or lamb foetus, that had no wool at all, had its joints and skeleton very severely affected and a smaller brain. This was carefully controlled and the only difference between the control animal and the deficient animal was 40 gamma of iodine, that's forty microgrammes of iodine a day. A sheep weighs about, something near, about what a human weighs and the – quite a clear experiment could be done. And then we realised that we needed to confirm this in the primate if we could so, I established a marmoset colony, flew out fifteen pairs from Manchester from ICI and established, with the help of my colleagues, a very good colony and we were able to show the same thing in the marmoset. So, there was a primate brain which showed this same vulnerability to iodine deficiency as the sheep brain and reproduced the human and, in a sense, provided a very clear animal model basis for the relation of iodine deficiency to brain development. Incidentally, we showed the importance of the maternal thyroid, as well as the foetal thyroid, and this was in advance of the demonstration that thyroid hormone crossed the placental barrier in the first half of pregnancy which we now know it does but, it was interesting that, you know, you finished up with a more fundamental observation

MB And you were able to pinpoint where the developmental problems were coming in the first trimester

BH That's right

MB by hysterectomy and removal, and looking at things quite early in pregnancy ...

BH what you can do – you can, exactly. The advantage of the sheep is, you can, with a good animal surgeon in the group, you can remove the maternal thyroid, you can remove the foetal thyroid *in utero* and it lends itself to this sort of study so, we were, of course, able to do much more detailed studies in the sheep than we did in the marmoset but, they compliment one another and provided a firm basis, in other words, for this relationship which has, of course, been the – with the epidemiology work in New Guinea since which no other trial has been done, it's not ethically justified. But, of course, there are plenty of observations that fit in with what we found in New Guinea but, this trial was definitive with the experimental work and provided a clear basis for what might be termed a public health programme, international public health programme, which later, of course, I realised was a very big undertaking.

MB That is the most immense development. I mean, the whole of this real pioneering started in your unit, first at Adelaide and then at Monash which we didn't talk enough about and I'd be selling you short if I let the Monash years go away.

BH Well, at Monash, I was more concerned with the general public health issues. The work in New Guinea was maturing, so to speak. You see, I went to Monash in 1968, two years after we set the trial up. We didn't have the answer 'til '71 and we had, you know, determinations to be done, the work had to be rounded off up to '71. I wasn't able really to pursue any further specific research, new research, at Monash. I was – not until I went to the CSRO – but, at Monash I was really involved in the new public health – you might say, that we've had the sanitary revolution in the 19th century concerned with the physical environment, and what we now have is a revolution relating to the social environment and the importance of the social environment in health, and that's the issue that I was concerned with at Monash.

MB Would I be fair in kind of summarising and saying that the biochemist, the kind of clinical researcher, became more social medicine adapted in the Monash years?

BH That's right. I made the transition from clinical medicine to preventive medicine, public health, when I moved to Monash to start a new department in a new medical school in a new university in '68. Why did I do that?

MB Yes.

BH Two factors. One was New Guinea, seeing a developing country and the immense importance of public health in developing countries. The other was increasing involvement in the social dimension of health in Australia. I was involved in an enterprise which was really related to the Australian Council of Churches initiative called 'Australian Frontier' which had consultations in the community related to various community problems, including health problems, and I'd got very interested in the social aspect of health, and these two factors really carried me out of clinical medicine into public health in '68. It's a fairly unusual thing to do. Some of my friends thought – professors of medicine are accustomed to think that they are the top of the heap, in a word – and some of my colleagues thought I'd gone round the bend, to be perfectly frank, to move from clinical which was regarded as the acme, professor of clinical medicine, to a professor of social and preventive medicine, very – it happened in England. It happened with John Ryall, one of the Ryalls ...

MB That's right

BH to the first chair of social medicine in Oxford and in England they have said "Well, you did a Ryall", that's the way they sometimes put it but, of course, I have found public health a tremendous opportunity, first of all, of course, in Australia with the – I was asked to give these Boyle lectures in 1971 which – Life and Health in Australia – I presented, really, the broad panorama and a new view of health in social

terms, behavioural terms, health service terms, environmental terms, and that did really have quite an impact

MB This was the ABC ...

BH This is the ABC Annual Lectureship that is still given, of course. I think it had some political impact, apart from its impact amongst universities, medical schools in the health, professional training, education but, also, I observed that that time in 1972 was a fairly critical period in Australia, critical period of change prior to the election of the Whitlam government at the end of '72, and various things were picked up really that became part of public policy

MB And assisted the health conscience of Australia

BH ...yes ... yes. This was – I didn't, of course, anticipate this but, this is what happened

MB You were beginning to become a health diplomat

BH ... well, that's right. It – one – I was interested in things happening, in things – if you're putting forward ideas, one of the most interesting ideas being adopted and being implemented and I think, to a degree, that that did occur and I've always felt that a matter of timing, of course, comes into it. It was regarded – when I went to Melbourne, I was surprised at the attention given to me by the media, for example. It was regarded a new thing, you see, in 1968, and I think it was a result of some media exposure that I was asked to give these lectures, because I was really pretty young to do that, in 1971. All sorts of eminent people do them and they were actually switching alternately to a younger or an older eminent person. So, that really got me into the national arena in Australia and I subsequently wrote this Penguin 'Health in Australian Society

MB Which we've got a copy of here, 3rd edition of

BH ... that's the – it was '74 it appeared which really described the health landscape in terms of modern Australian epidemics and, for the first time, portrayed the fact that although we live in this wonderful country with a wonderful environment, we're not healthy, not as healthy as we should be. We smoke and drink too much, we've got very high rates of heart disease and so on, all the classical diseases of affluence, very high alcohol intake. This whole picture had never really been put together before

MB And then it was

BH and that's what I did to some extent in those short, of course, formal lectures and in this Penguin, which has gone on selling and has only just dropped out of print

MB Terrific cover

BH after nearly twenty years

MB I like the cover very much

BH ... it has been widely used by students particularly, which I am pleased about, over 40,000 copies of that book have sold and, if I was writing it today, I couldn't do it in that sort of space. But, in those days, twenty odd years ago, of course, it was a bit simpler to describe the whole health landscape, not only the health problems but, the health services, rather briefly but, nonetheless, in what might be termed a reasonably comprehensible fashion, so that it could be updated with other material. So, that really was my major preoccupation at Monash and then, when I went to the CSRO in '76, I had the broad interest in health and everything else which was pursued, as I've said, with reference to cancer and heart disease and alcohol but, then I was able to take up the special interest of the iodine deficiency in the brain so, I was very fortunate.

MB Going back to the original strand?

BH That's right, that's right

MB And you've never left that either?

BH No, I never lost sight of it. I mean, the work in New Guinea was the most important work, you know, on its own that I have ever been associated with and it was so definitive so that, when the time came and I retired from CSRO after ten years, I had already started thinking about the international public health aspect. One major stimulus to this was going to China. I went to China in '81, not privately, I went on a CSRO mission looking at water and I was taking in the public health aspects of water with some physical scientists, a water engineer, a water chemist and a biologist, water physicist you might say, and I was asked to go, providing a biological background, and when I got to Beijing, there was a message from a Professor Chu - 'Please come and visit us. We know of your work in New Guinea'. So, I was able to do that. I had two days there, they were two of the most exciting days of my life, visiting with these Chinese colleagues, who were very interested in the iodised oil. They, in fact, had developed their own oil in China and were using it, and they were very interested in the whole - well, a more dynamic approach - and had appreciated - Professor Chu with Doctor Marr, his right-hand man, had been pioneers in the use of iodised salt in China and were aware of the immensity of the problem ...

MB That was massive in China

BH enormous problem, with a billion people, probably - we've now estimated about forty per cent (40%) living in an iodine deficient environment, that is 400 million. We immediately made plans for some form of collaboration in research, they

were very interested in our animal work and so, it was – I was able to visit one or two other medical schools while we went round on the – primarily oriented towards the water problems – but, I was able to visit in two other medical schools which had an interest in iodine because, of course, it's so important in China, and this really gave me quite a kick, that this problem was really of major proportions and, indeed, should be really attacked in a much more positive manner than was taking place. I'd done a little bit of work with our aid agency as a consultant in Thailand and one or two other places, and this led to attendance at a special UN Committee on Nutrition in Bangkok in '82. When I realised that we were unable to communicate the nature of this problem in what might be termed a UN manner system, an intelligible way, I realised that the problem had to be re-conceptualised. To talk about goitre as a lump in the neck is meaningless in the Third World. Cretinism, well, cretinism is only a small part of the problem. It was clear that there was a graduation of defect so, after a fair bit of cogitation and some encouragement, I said to my senior colleagues in the United States and Europe "We've got to get rid of the word 'goitre'," and, somewhat to my surprise, they agreed. They were 'goitre kings' and thyroidologists, of course, and had spent a lot of time studying this big lump in the neck, very interesting phenomenon. But, it was clear to me that the brain was, of course, where the action was. That's where it was important in the light of the New Guinea work so, I was in China again in '82, invited to visit by professor Chu, had a very extensive visit with Dr. Marr, both out west to Shenyang province, up north to Shandong and, again, saw the immensity of the problem, and it was actually in '83 that I finally clicked on the idea, crystallised the notion, that iodine deficiency disorders, IDD, has a concept indicating the effect of iodine deficiency on a population. So, you get a graduation of effect, that is, of course, you have gross cretinism which is, in a sense, the visible part of the iceberg, seven-eighths of the problem is lesser degrees of effect which, of course, are not obvious until you do special tests. There are also effects on survival; stillbirths are quite common in severe iodine deficiency so, I put forward iodine deficiency, in other words, in terms of growth and development – foetus, the new-born, the child and the adult – and that, I put forward in the 'Lancet' in '83 and pointed out that this problem really should be eliminated, and the change was supported subsequently and has now become standard throughout the international scene and throughout the world, and it's really the re-conceptualisation that paved the way for the international health programme, because we now had a population concept as opposed to a clinical concept of a lump in the neck. In the light of the experience in China and I'd also been in Indonesia quite a bit, and we'd done some studies in Indonesia in between and shown that there were these lesser severe defects; walking age, for example, is affected by iodine deficiency and we showed that – I had a young American colleague working in central Java, that was reported in the early eighties. So, we had, you might say, the skeleton of this broader concept of population effect growth and development which I put forward at an international meeting in Nutrition in Bangkok in late '83 and some of the people – the leading figures in international nutrition – were interested and later, I was asked to review the problem for the UN system in '84, which I did, and the report was submitted to the Secretariat in Rome at the beginning of '85 and I realised, when I sat down to look at the whole thing, that we had to have some means for transferring the knowledge that we had to developing countries. We needed a

consultative expert group to do that. This had occurred with Vitamin A and iron deficiency to some extent but, they hadn't got very far. I put this forward to my colleagues when we were meeting in Delhi in March '86 and they agreed that we ought to form a group. Support became available from UNICEF initially and from the Australian Aid Programme

MB Was that strong support?

BH Well, quite significant support. UNICEF at that stage had provided one hundred and fifty thousand a year (150,000), and we formed – during '85 – we formed a sort of embryo organisation which was then formally inaugurated as the International Council for the Control of Iodine Deficiency Disorders in Kathmandu in Nepal in March '86 and I became executive director of the – what we call an NGO, International Non-Government Organisation – and there were regional co-ordinators for the six WHO regions of the world, who were nationals of the countries in those regions. We had a Chinese in the Western Pacific, we had an African, in fact, three Africans in Africa, we had an Indian in south-east Asia, we had a Peruvian in Latin America and we had a European, a Belgian colleague, for Europe. So, this body then had got moving. We worked very closely with WHO and UNICEF for obvious reasons. We were a small expert body able to orient the big bodies like WHO and UNICEF to this new concept, population concept, and with the emphasis on the effects on brain development and the prevention of mental defect, we developed really a very harmonious working relationship at global, regional and national level. Now, this network we started with has now reached more than three hundred (300) people around the world, public health professionals, scientists, and seventy (70) countries in that network. We put up a plan at the beginning of '90 – I put together what could be called an inter-agency plan to indicate the roles of the WHO, UNICEF, ICCIDD and other agencies which was endorsed at this UN committee in Paris in February '90 and we have worked to that plan since, and '90 was a very critical year because the notion of elimination of the problem which I put forward originally in '83, got to the World Health Assembly and was adopted by the World Health Assembly for 1990. There'd already been a resolution sponsored by Australia in '86 which directed attention to the problem but, it's very important – of course, the World Health Assembly represents – has representation from all members of the WHO which number, well, now, one hundred and eighty (180) or so countries represented at ministerial level once a year in Geneva. So, that was a big step, to have that accepted, and our work was commended in that resolution. The UNICEF executive board also accepted the objective and then, we had this very big event later. September '90, was the World Summit for Children at the UN, which was attended by seventy-one (71) heads of state who signed this declaration 'New Order for Health and Education of Children, unprecedented to have heads of state sign such a declaration, and it's been followed by eighty (80) other countries since. Listed as objectives for this new plan was the elimination of IDD by the year 2000. So, this provided real backing at top political level. It's had major effects since. We had a meeting on the micro-nutrients specifically, that is iodine, iron and Vitamin A at Montreal, sponsored by the Canadian Development Programme in October '91, and there were sixty (60) countries represented there, with delegations

nominated by heads of state. You see, this is a new dimension really for people in the health area, and this has had major effects. I met the Minister of Health of China at that meeting. I'd met him before. He has since become very aware of the problem in China and very interested. We had – following my earlier work in China – we had a review of the national programme in '89, and I set up an international working group to co-ordinate the aid in China with the agencies, UNICEF, WHO and then UNDP later and, trying to get a broader approach, there are bureaucratic problems, of course, in a country like China which has very ancient bureaucracy, as you know. There were bureaucrats way, way back and these problems have slowly been overcome and it – I'm very delighted to be able to report at this moment in time that I am to proceed to Beijing in two weeks time to speak in the Great Hall of the People in a major meeting called by the Prime Minister, Li Peng, presided by Madame Peng Pei Wan, who is responsible for health and welfare in China, one of the top five of the State Council of China, on the elimination of IDD in China, and it means that there will be top political backing for this problem which is required to make an effective programme and it's – I have to speak along with the other representatives of the other agencies. The conference is being attended by delegations from all provinces headed by governors, which means that, you know, things must happen because obviously it's got to happen at provincial level in China, as you probably know. You've got a province like Sichuan which has one hundred million people, a province like Guangdong has seventy million people so, these are big numbers, these are big undertakings but, iodised salt has done quite well in China but, it just hasn't been effectively enough organised. They've also used iodised oil on a big scale. What is required is a sort of larger-scale effective organisation and monitoring of the iodine content of salt which can be done to make sure the iodine is in the salt that the people are eating in their homes. Those things are quite straightforward but, they require organising for these large populations

MB The structure for this is now beginning to emerge

BH That's right, that's right. We – UNICEF and WHO are very important here and I am very delighted at this – really a culmination of twelve (12) years work in China which I was able to initiate to a degree and one sees that, you know, you can't reach a point like this other than with an appropriate period of preparation and 'softening up' is another word that could be used, so

MB I'm just trying to think how many kind of developments in the reduction of cretinism you've actually fostered. It must be a colossal reduction in cretinism internationally.

BH Well, through the international group, you see, we have our colleagues throughout the world and, particularly, in developing countries with the problem. I've just read a report for the ancient Himalayan kingdom of Bhutan. Bhutan is in the Himalayas, as you know, it has a king. It has 650,000 people. It had goitre rates of 60-70 per cent ten years ago. I've just read a report – I was in Bhutan in 1985 when they started their iodised salt programme at a place called Phuntsholing on the

Bhutan/Indian border and we inaugurated, with an appropriate Buddhist ritual, this first salt iodisation plant for Bhutan, and they have gone on from there and can now report, as of last year, a highly effective programme so that their salt is eighty to ninety per cent iodised. Now, you're talking about very, very remote areas in the mountains in Bhutan. One of the commonest causes of admission to hospital, I learnt, was bear attack, you know, the bears are wandering around, and in this country we managed somehow – and, of course, the credit is due to the Bhutanese who distributed iodised salt with a big reduction in goitre. It's now down to about twenty-four per cent instead of being seventy per cent. The other tests, careful tests on the salt – iodised salt – have been done and, also, blood spots in the new-borns that indicate that there is enough iodine getting in to prevent this retarded brain development, due to neo-natal hyperthyroidism. The – that's an important indicator – every new-born in many western countries now has a blood sample at the fourth day of life from the heel, a heel prick sample, which is checked for thyroid hormone and, if it is low, treatment with thyroid hormone is given immediately, because of the threat to brain development. Now, due to congenital cause – this is, the thyroid may be in the wrong place or only about half the normal size or something, 1 in 4,000 births this happens – and we screen Britain, US, Australia to pick up this defect in 1 in 4,000 births. Now, in a severely iodine deficient region, that figure of a low thyroid hormone reaches ten per cent and gives you some idea of the dimension of the problem which can be prevented in this way. In Bhutan, the figures were of the order of one to four per cent new-borns showing the effect. So, it is now clear that the new-borns are just about back to normal, that is, the only depression of the thyroid hormone is due to a congenital defect, not iodine deficiency. It's almost totally corrected. That's been done in eight years, not very costly at all. The benefits in terms of prevention of mental defect are, of course, enormous and, of course, that's one point that can be made these days, the cost-effective issue comes up, of course, all the time. The incalculable benefits to a country – and that's what the Chinese have realised, you see. They're – after all – they're still on a one child family policy and there's not much sense in having a one child family policy when you've got a significant proportion of your new-borns with impaired brain development due to iodine deficiency, and that's finally got through to the top. They've got to get this problem under control which they can do. There is no reason why that can't be done at a very modest cost, and that's been the message.

MB Basil, this must be an enormous source of gratification for you, to achieve so much from those western highlands of Papua, those early studies

BH Well, I've been privileged to ...

MB You've come a long journey with it. I mean, I'm just thinking of these early prophetic documents in Australia but, you're now moving to a great international achievement.

BH Well, I have very good colleagues. I have had very good support from my colleagues. One good fortune I have had is a varied background. I've been in clinical medicine. I've been in epidemiology population medicine, I've been in nutrition. Not

many people have combined those opportunities. In Australia, I've been fortunate in a way to be able to move at a certain time

MB And you've also had a strong Christian sense of purpose that has helped this story along very well.

BH Well, it – I think human values in the end are very important. I wondered at the time I went into Papua New Guinea, whether I could really take anything else on. I was busy enough but, I decided I should do that and, as I say, I had a wonderful wife supporting me so, that – yes, I've been singularly fortunate to have had these opportunities and I somewhat marvel myself at what, you know, has come, so to speak, and China is a special interest.

MB And I know how satisfied you are to be able to go back in a fortnight's time to this marvellous meeting.

BH That's right.

MB It's on this ambassadorial role of yours that I want to turn this interview towards its close and to embarrass you slightly by saying there've been kind of glittering prizes at the end of the story as far as it's gone, by you becoming a Chancellor of a new university and also a Governor

BH Lieutenant-governor

MB ... governor of a state in Australia

BH south Australia, yes. That was a very great honour and a very big surprise because it's not many – it's very few medical graduates that have received such appointment. Normally, they go to judges and this is true in Australia, the Chief Justice is normally the Lieutenant-governor. In south Australia, which is a little different in various ways, twenty odd years ago, the then Chief Justice did not wish to become Lieutenant-governor, didn't wish to combine the executive and the judicial functions so, he said he didn't – that made the way for another appointment so, a retired diplomat was appointed and then a retired, very senior, respected politician was appointed ten years later and then he retired on health grounds last year, and I was appointed. It is an unusual thing to happen and it is a tribute, I think, to the profession in this country. It's, of course – I appreciate it from the point of view of my family and the fact that, I think, I am proud to be an Australian. I think Australia – I think I would regard as the most generous compliment I've ever received was one of my Algerian colleagues, studied extensively in the United States, he's a professor in Algiers, he's in our group, he's our senior man in Africa, said to me "Oh", he said "you Australians seem to have still got the pioneering spirit", which he thought the Americans had lost and I think, indeed, we have still something of the pioneering spirit. There are a lot of Australians to be seen in the UN system. They come out of the woodwork all over the place, so to speak, I think, because of this, partly. We're a

small country, of course, we're not a threat, we do not have an imperial past and we can move rather easily in the UN system, I think, like the Scandinavians and the Canadians, and it's a very privileged situation.

MB And you and your second wife, I should mention, are now giving this tremendous service to south Australia, as well as giving international care for iodine deficiency.

BH I have been greatly blessed, having lost my first wife in 1980, by marrying Anne. My first wife was Helen, my second wife is Anne, who was herself a widow some five years and we married just ten years ago in '83, late '83, and it has been a great blessing. She is an artist. She paints and draws extremely well but, her particular forte is embroidery, and she has had a series of exhibitions in Adelaide of her embroidery, and this has been related to our travelling. For example, she has a wonderful series about China, the Buddhist monasteries we visited. We were in a Tibetan village in northern Sichuan in '89; she has the landscape of China in various parts. This has been a wonderful – she, indeed, gives quite a few talks about her work but, includes the mention of the iodine problem and the challenge of iodine deficiency so, it's been – you're quite right, I have been greatly blessed with two wonderful partners in my life and I've been fortunate in my father and mother, the environment of Australia, born at a time when there was more opportunity, academically, in this country from the sixties, not quite so easy now. So, I consider I've been very privileged and had the opportunity to make something out of this, and that's the story.

MB And I feel privileged to have heard it today.

BH Well, thank you, Max.

MB Basil, thank you.

BH Thank you very much.

END OF INTERVIEW.