

IN MEMORIAM

Recent photograph of Professor F.C. Courtice (1911-1992) and wife, Joy

The news of Professor F.C. Courtice's death filled me with great sorrow. When I visited him at his home in the Sydney suburb of St. Ives last Easter, he was healthy and enjoying gardening and the company of his wife Joy and his devoted dog. This was not long after he and his wife returned from the biennial meeting of the Australia-New Zealand Society for Microcirculation Research held in Lorne Victoria. Professor Courtice played a leading role in the formation of this Society following his retirement. He was its first President, a position he held for a number of years until

the Lorne meeting when he resigned, one month before his 80th birthday. One aspect of his longer-term participation in international science which was of particular interest to me, was his ambassadorship between Australia and Japan. He returned to Australia from Oxford to assume the Directorship of the Kanematsu Memorial Institute of Pathology at Sydney Hospital. He resigned from this position to become the founding Professor and Head of the Department of Experimental Pathology at the John Curtin School of Medical Research at the Australian National University, and subsequently became the Director of this School. A common thread through these appointments was an ongoing association with many Japanese scientists working on the lymphatic system and the microcirculation. More than a dozen Japanese scientists, anatomists, physiologists and immunologists, went to work for significant periods in this Department or later the department headed by one of his proteges and colleagues, the late Bede Morris. He visited Japan three times from 1965, the last time as an honored guest and participant at the XIIth International Congress of Lymphology held at Tokyo and Kyoto in 1989. He was the doyen of many Japanese scientists specializing in lymphology, whose regard for him was like that of children for their homeroom teacher. I lament that I became the last of the Japanese colleagues to see him when I visited St. Ives in Easter of 1991.

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Ten years ago a Festschrift was held for Professor Courtice on the occasion of his seventieth birthday. Among the addressees was his most renowned student, Professor Bede Morris, who tragically was killed after a Paris road accident in 1988. At that time, Dr. Courtice had written the obituary which was published in Lymphology 21 (1988), 198-202, and it seems only fitting that Prof. Morris' summation of Colin Courtice's remarkable career be reprinted now.

Reprinted from *Festschrift for F.C. Courtice*, Garlick, D. (Ed.), The University of New South Wales School of Physiology and Pharmacology, 1981.

I first met F.C. Courtice in December 1951. I had just graduated and it had been suggested to me that I might try my hand at research rather than indulging in veterinary leechcraft. The proposition seemed to me unlikely to offer much in the way of financial rewards or career prospects but I was interested enough to canvass the possibility of working at the Kanematsu Institute, Sydney Hospital. I had been told that the Institute had a new Director, a Dr. Courtice who had come from Oxford in 1948, and that there might be some bench space there and a chance to do research with him.

I rode my bicycle to the Hospital from the University along Castlereagh Street and left it propped up against the coke bunkers on the Domain side of the Kanematsu Institute where I found subsequently that Bea Miles had her summer residence. I took the lift to the fourth floor and gave my name to Grace Harvey, the secretary. She showed me into the Director's study, a large, leather-chaired, polished wood affair that had a stupendous view across the Domain and the harbour and introduced me to Dr. Courtice. On the wall there were four photographs; one large panoramic picture of dozens of people arranged in rows as a record of the International Physiological Congress held in Oxford in 1947 and three individual portraits, one of a distinguished man in academic dress, another of a more homely head and shoulders and the third, a

candid photograph of someone who had stood just too far from the lens to be easily made out. I have no recollection of being overwhelmed by the interview but I do remember quite clearly being asked to recite my academic accomplishments and these were taken down together with some of my personal details. I also remember Courtice paying me a modest compliment in regard to my academic achievements and he then told me that it might be possible for me to come and work at the Kanematsu if I could make some financial arrangements for myself.

Courtice then showed me over the fourth floor of the Institute; through the library, the large professorial laboratory again with the most splendid views of the Domain and the harbour, the general purpose lab, two smaller labs, an instrument room, still with blackout screens and other reminders of the ghosts of Eccles and Katz, and a workshop. Alf Steinbeck had just left the Kanematsu after completing some research on absorption from the peritoneal cavity for his MD degree but he had left behind, as a testimony of his fastidiousness, a bottle labelled 2.502746 N (approx.) NaOH. Wilf Simmonds, Paul Korner and Bernard Lake were already working in the labs and Ian Darian-Smith came a few months later. I went off and organized a scholarship from Sydney University and with this began my research career under Courtice studying the physiology of the lymphatic system.

Courtice stayed at the Kanematsu for 10 years and although he went on to occupy more important and more influential posts in Australian medical science, I believe that, during the time he was Director of the Kanematsu, he made his most significant contributions to Australian medical research. The contributions were made in several ways. First of all he re-established basic research into physiology and experimental pathology at Sydney Hospital, and this research, together with the personal philosophy that underlay it and the commitment he had to the experimental method provided new benchmarks to

replace those that had gone when Eccles and his colleagues left Sydney in 1943. The quality and the activity of medical research in Sydney and in Australia for that matter was at a pitifully low ebb after the war and Courtice's appointment to the Kanematsu was a great stimulus for Sydney Hospital and for the medical research community of Sydney. He was seen as someone who had come back to Australia from one of the centres of world learning at a time when Australia's best brains were traditionally draining in the other direction. Courtice became involved in the activities of the NH & MRC and the Life Insurance Medical Research Fund soon after he returned to Australia; at this time support for medical research came from a very few sources and he was able to influence the financing of research through these and other funding bodies during the fifties. More importantly, and this became clear only in retrospect, Courtice set about training a group of young people at the Kanematsu who have carried his philosophy of medical research into many important academic positions in Australian Universities.

Courtice had a strong conviction that there should be a close relationship between basic laboratory research and the practice of medicine even though he was personally at pains to discourage collaborative research with the physicians and surgeons of the hospital who "wanted to try out an idea". He did this I think because as a professional scientist he did not wish to become involved in research as a form of occupational therapy even though he supported and encouraged clinical research. Courtice was responsible for persuading Sydney Hospital to establish a Department of Clinical Research and in 1956 Malcolm Whyte was appointed from Oxford to become the Director of this new Department. The Department of Clinical Research had one of the first renal dialysis units in Australia, and much of the first class work done on clinical problems associated with renal disease and its treatment at Sydney Hospital resulted from Courtice's vision and enterprise in establishing a new standard for the

investigation, diagnosis and treatment of patients in the hospital.

For much of the time that I was at the Kanematsu, Courtice was committed to rewriting the classic text on the lymphatic system by Drinker and Yoffey. C.K. Drinker was still alive at the time but his health was failing and Yoffey had asked Courtice to take on Drinker's part of the book which dealt with the anatomy and physiology of lymph and lymphatics. Courtice had met Yoffey at Porton during the way when he (Courtice) was working with Cameron on problems of pulmonary oedema associated with war gas poisoning — in fact it was Yoffey who first showed Courtice how to cannulate the thoracic duct in cats. Courtice did not meet Drinker but he had written to Drinker's wife and had a reply from her about the monograph he was writing. I recall Courtice saying that Drinker had been convinced that if anyone could develop a method for establishing chronic lymphatic fistulae that would flow predictably in conscious animals, the study of the lymphatic system would be revolutionized. There was little hope of doing this surgically and I learned how to cannulate lymphatics in anaesthetized cats with glass cannulae and sat for hours at night aspirating cervical, hepatic, intestinal and thoracic duct lymph from them, placing a fine wire loop coated with powdered heparin into the cannula at intervals to prevent the lymph from clotting.

In 1948 two papers by Bollman, Cain and Grindlay and by Bollman, Flock, Cain and Grindlay had been published describing a technique for cannulating lymphatics in the rat and in the dog with tubing that was made from new plastic materials, polyvinyl chloride and polyethylene. A method was also described for restraining a rat with an indwelling cannula in its thoracic duct so that lymph could be collected over periods of several days in the conscious animal. This was the chronic lymphatic fistula that Drinker had wanted so badly to produce surgically but which had proved beyond everyone because of the enormous plasticity and regenerative capacity of the lymphatic

system. Courtice saw at once the significance of these techniques for his own research. The plastic tubing became available in Australia for the first time in 1953 and Wilf Simmonds sought it out and soon had some cannulated rats in restraining cages with thoracic duct lymph gushing from them. As the interests of the laboratory were focussed on the physiology of lymph it was natural that the first experiments done by Simmonds were related to the effects of fat digestion and absorption on lymph flow. Chylomicrons were studied in great detail but the other formed element of the lymph, the lymphocyte, was ignored.

In 1954 Florey visited the Kanematsu Institute. He was taken around the labs and introduced to us all. I remember Wilf Simmonds being somewhat case down when he showed Florey his rat thoracic duct preparations only to be told that this sort of thing was being done in Oxford at the Dunn School. Florey with his perceptiveness and eye for the main chance had seen as clearly as Courtice, the way in which the techniques could be used to provide answers to a whole range of important medical problems. Already in the Dunn School, Gowans had begun to investigate the life-history of the lymphocyte by this method while at the same time Florey, French and Robinson were studying aspects of fat transport and metabolism in relation to the general question of cardiovascular disease. I suspect that it was during this visit that Courtice laid the groundwork for a proposal he made to Florey to take me on at the Dunn School of pathology. I left the Kanematsu for Oxford in January 1956 with Courtice's blessing having been awarded a sumptuous Life Insurance Travelling Fellowship. Paul Korner and Ian Darian-Smith had already preceded me to the U.K.

Courtice was pleased for me to be going to Oxford for it was, in many respects, his intellectual and spiritual home. The decision he made to leave there in 1948 to return to Australia must have been a desperately difficult one; it would have been hard to identify any particular scientific virtues in the Kanematsu Institute at this time when

compared with the Physiology Department of Oxford. But Courtice was married with three children, he had no college office and although the Readership in Human Physiology was a significant academic post in the University, the Oxford School had cast its die for neurophysiology when it chose Sherrington for the Chair instead of Haldane back in 1913, and there would have been no reason for Courtice to see any shift in the emphasis on research in the School with Liddell's appointment as a successor to Sherrington. Apart from all this Courtice was still very much an Australian and even more a Queenslander in spite of the fact that he now pronounced "school", "schul" and "room", "rhum". My stay in Oxford was made that much more pleasant and enjoyable because many people knew that I had come from Courtice's laboratory. I remember Florey describing Courtice as a "guideless man" with what I felt was admiration and for someone like Florey, affection. I met, too, the three people whose pictures I saw on the wall of Courtice's office when I first went to the Kanematsu; C.G. Douglas, Courtice's scientific mentor, for the first time at a Sherrington Society evening at Magdalen, Cameron when he visited the Dunn School during the writing of Florey's Textbook of Pathology and Lovett Evans when I sat next to him at a Physiology Society dinner, again at Magdalen.

During the period 1956-1958 it seems that the climate for research at Sydney Hospital deteriorated and the Hospital's Commission became more difficult for Courtice to deal with, particularly over questions of sabbatical leave. Courtice had been sounded out several times by Hugh Ennor who was then Dean of the John Curtin School of Medical Research at the Australian National University to see if he would take up a position in Canberra. Courtice was quite disinterested in any such proposition up until the time I left the Kanematsu in 1956 for he loved his domestic situation at Clifton Gardens, the ferry ride to work and he had a sense of achievement and pride in the developments

at the Kanematsu and at Sydney Hospital. Ennor visited Oxford in 1957 to try and resolve with Florey the arrangements for him to come to Canberra and take over the Directorship of the John Curtin School and the Chair in Experimental Pathology at the J.C.S.M.R. and asking me if I would care to go to Canberra with him.

The first thing Courtice did when he was appointed to the Chair of Experimental Pathology was to arrange a trip overseas to visit various laboratories in the U.S.A. and the U.K. He had worked for 10 solid years at Sydney Hospital with no sabbatical leave entitlement and while there he had felt very far removed from international science. The prospect of having regular study leave periods overseas was no doubt an important inducement for Courtice to go to the A.N.U. He came back from this first study leave refreshed and stimulated and he began the job of developing the Department of Experimental Pathology with great vigour. He brought with him to Canberra his chief technician, Jack Harding, and together they established a Department in which everybody was able to express their own particular talents and creative aspirations.

The next 10 years (1959-1969) was a period of excitement and pleasure. The John Curtin School was full of scientists of great quality and funds were readily available to do what needed to be done. Ennor had set a style for the School which was perfectly suited to the time and there was enterprise, innovation and imagination in all the research. The facilities at the J.C.S.M.R. were just so good compared with those of the Kanematsu Institute and Courtice, for the first time in his scientific career, was able to develop his ideas without the restraints of space, money and staff that he had always known. The Department of Experimental Pathology flourished and research into lymphatic physiology took on a completely new experimental emphasis. While Courtice's personal interests shifted towards the study of pathological phenomena such as inflammation and vascular injury, he continued to work on the physiology of the microcirculation, on lipid

metabolism, capillary permeability and on the alterations that occur in the volume and composition of lymph following vascular damage. Courtice's talent for non-interference and for accommodating eccentricity, and non-conformity of intellect made him, in my judgement, the most successful Head of Department that the J.C.S.M.R. has yet had. He also had the real advantage over his colleagues of knowing much more than they did about the practice of surgery and medicine and about hospitals and health care. It was because of this that he assumed a special role while at the J.C.S.M.R. as spokesman and advisor for the A.N.U. on medical issues. He joined the Board of the Canberra Hospital not long after he came to the A.N.U. and he played a major part in promoting the development of a Department of Clinical Research in the J.C.S.M.R. based at the hospital. He was also much involved as a member of a Governmental Advisory Committee which recommended on the establishment of a second medical school in N.S.W. and in the development of an idea to have an undergraduate medical school within the A.N.U. He was greatly disappointed when political pragmatism overwhelmed arguments of academic excellence and the new undergraduate Medical School went to Newcastle University.

Courtice travelled overseas regularly to attend international conferences and to visit laboratories during the 16 years he was Head of the Department of Experimental Pathology. He was invited to a Symposium held in New Orleans in 1965 in honour of Professor Mayerson and out of this meeting the International Society of Lymphology was formed and had its first meeting in Charleroi in 1966. Courtice was the most distinguished scientist and personality at the meetings of the Society and I remember being with him at the International Congress in Miami in 1968 when he was given the freedom of the city by the Chief of Police.

At a meeting of the International Lymphology Congress in Tucson in 1973 he received the Society's prize, awarded

annually for the best scientific paper published in the journal 'Lymphology'. I recall the quiet special courtesies given to Courtice and I remember being greatly covetous of the accommodation arranged for him by the Congress organizers at the delightful rancho-style Arizona Inn, a salubrious watering place for millionaires; I stayed with Max Simpson-Morgan at a chrome-plated, hyper-sanitized hotel on one of the Tucson's main thoroughfares. The contributions made by members of the Department of Experimental Pathology and by individuals who had worked with Courtice in a variety of circumstances were highlights of this and other Lymphology Congresses.

One particular aspect of Courtice's participation in international science gave him special pleasure. For many years he had been in touch through his science with people working on the lymphatic system in Japan. Courtice visited Japan first in 1965 and travelled to Kyoto and Okayama where he met Professor Bunsuke Osogoe and Dr. Masahiko Kontani. In 1966 Osogoe came to work in the Department of Experimental Pathology as a Visiting Fellow for a year; one of Osogoe's young men Akira Yamashita took up a Post-doctoral Fellowship in the Department in 1967. They were the start of a line of a dozen Japanese medical scientists who came to the Department of Experimental Pathology and later to the Department of Immunology because of the relationship that Courtice developed with Japanese lymphatic anatomists, physiologists and immunologists. This exchange has continued since Courtice left the A.N.U. and it stands as his personal contribution to Australia's international scientific relations. In 1973 Courtice went to Japan on a short visit and was accorded an Emperor-style welcome by those Japanese he had come to know and by their pupils. Those members of the Department who have visited Japan subsequently have been treated with similar courtesy and I remember with much gratitude and pleasure the splendid visit I had there in 1977. I had no doubt that my own experiences and those of others were

the result largely of the scientific ambassadorship of Courtice.

Courtice made many significant contributions to the A.N.U. during the time he was Head of Experimental Pathology and his moderate council and wise judgement were sought by successive Vice-Chancellors. When Sir Hugh Ennor left the School somewhat precipitously first to become Deputy Vice-Chancellor in 1964 and subsequently in 1967 to be Secretary of the Department of Education and Science, Courtice served for some time as Acting Director of the John Curtin School while still retaining the Headship of the Department of Experimental Pathology. He had a great deal of popular support in the School and he was seen to be an effectively and scrupulously fair administrator. Frank Fenner became Director for a term of 7 years from 1967-1973 and during this time Courtice took on the job of Deputy Chairman of the Board of the Institute of Advanced Studies. He served as Chairman of the National Radiation Advisory Committee, on the NH & MRC, the National Heart Foundation and he continued as a member of the Life Insurance Medical Research Fund. He was also a member of the Council of the Australian Academy of Science and a Vice-President between 1964 and 1966. When Fenner's term as Director ended in 1973, Courtice again served as Acting Director of the School for a year and half before being appointed Director in 1974. I hoped at the time he would not take the job but choose to remain as Head of Experimental Pathology, for it seemed to me that he had more to give in a continuing sense in this role than as a short-term Director. If he had been made Director 7 years earlier my view would have been different. As Director of the School he was appointed to the Howard Florey Professorship of Medical Research. The distinction was fitting enough for his contribution to Australian medical science and to the University.

When Courtice left the J.C.S.M.R. he had published a vast bibliography of papers on a variety of topics in physiology and

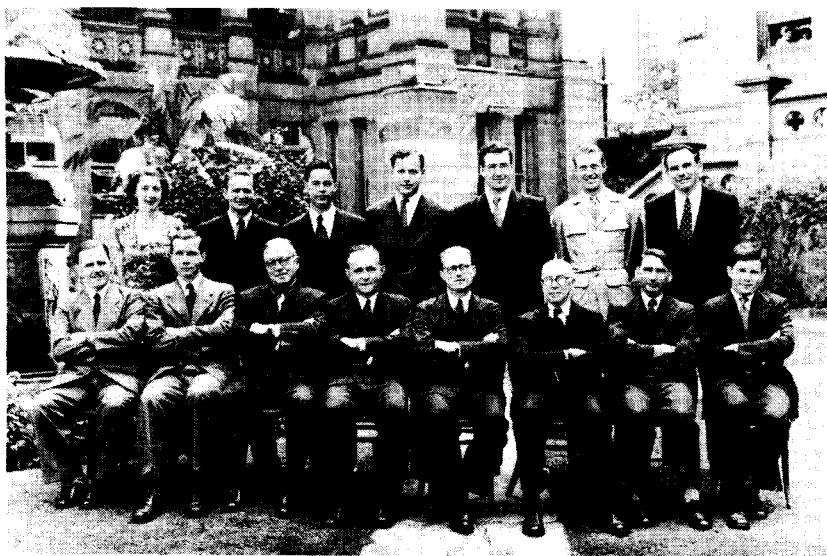
pathology and he had written two classical monographs. Along the wall of the Department of Experimental Pathology there is a gallery made up of three rows of photographs that extend for about 7 metres along the corridor. Some 70 scientists who worked in the Department during the time Courtice was its Head are featured in the gallery. There are senior academics, distinguished visitors and young research workers who are already making their names in science in Australia and overseas. Eleven nationalities feature amongst them and there are 39 PhD or MD degrees which have been awarded to scholars of the Department. Add to these the coterie of 6 professors trained by Courtice at the Kanematsu who now occupy Chairs, Deanships and the like in several of Australia's medical schools, together with the large number of distinguished second generation scientists who are the pupils of

Courtice's pupils and his influence is seen in its proper perspective.

When he left Canberra Courtice gave me his copy of "The Physiology of the Elephant" by Francis Benedict. It was a book I had always wanted to own. The dimensions of the experiments described in it are of the same order as Courtice's contribution to Australian medicine.

Bede Morris

A true giant among us has passed on. Along with Ernest Starling and Cecil Drinker, F. Colin Courtice was in this century a monumental contributor to our basic understanding of the lymphatic system and his book Lymphatics, Lymph and the Lymphomyeloid Complex, coauthored with Joseph M. Yoffey, remains an unrivalled "bible" for lymphologists everywhere. (CLW).



Staff of the Kanematsu Memorial Institute of Pathology, Sydney Hospital, 1952

Back row (l to r): Gwenda Martin (Junior Resident Pathologist), W.G. Harden (Junior Resident Pathologist), B. R. Hurt (Senior Resident Pathologist), P.J. Korner (NHMRC Research Fellow), B.J. Lake (NHMRC Research Fellow), B. Morris (Research Scholar), C.H. Campbell (Junior Resident Pathologist)

Front row (l to r): L.R. Finlay-Jones (Assistant Pathologist), H.M. Whyte (Senior Clinical Research Fellow), C.H. Shearman (Serologist), G.A.W. Johnston (Bacteriologist; Assistant Director), F.C. Courtice (Director), H.S. H. Wardlaw (Biochemist), A.A. Palmer (Pathologist), W.J. Simmonds (Senior Research Fellow)