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Director of the MRC Clinical Genetics Unit, Institute of Child Health, London, 1964–1982, and Assistant Editor of Journal of Medical Genetics, 1970–1983

Tributes and recollections from colleagues

Cedric Oswald Carter died suddenly of a myocardial infarction on 12 March 1984, and the issue of *Journal of Medical Genetics* appearing at about that time contained my appreciation of him as Assistant Editor. Everything I wrote then stands except, sadly, my suggestions and hopes for his retirement.

Many excellent obituaries of Cedric have appeared, but for this Journal I thought it would be more interesting to obtain some personal recollections of his life and work, and I am most grateful to his long-standing or close colleagues who have contributed their feelings about him, including occasional disagreements.

The extracts from letters written to me are in alphabetical order.

C A CLARKE

SARAH BUNDEY

I shall always feel grateful towards Cedric, for he was my mentor in clinical genetics and not only encouraged me in the subject but taught me all I knew that was worth knowing concerning the analysis of genetic data. After I left his department I would seek his help regarding difficult genetic problems and he would always give me excellent and very brief advice that went straight to the point.

As regards personal comments I remember being amused at his encouraging me to have lots of children even though I married late in life. I also remember that he was a boxing blue and he felt that he would have coped very effectively had he been in the position that Professor Eysenck was when he was knocked about by students for daring to say that intelligence was inherited.

On another tack, I would like to recall Cedric's work with the Eugenics Society where he was very active in widening its scope and organising extremely interesting articles and symposia.

JOHN EDWARDS

As an anti-eugenicist I found a certain lack of sympathy and, as I regard his introduction of the

concept of multifactorial inheritance as by no means an advance, I also had difficulties in trying to counter this influence with such an honourable and persistent enthusiast. He would listen so carefully, and greatly help me with his defences to think more deeply, but I do not think we ever quite understood why we both thought the other was dealing with a tautology.

My main correspondence was relating to empirical risks, and his solid and massive personal data must have done more to allay anxiety than almost any other single source. At least I tried to get it appreciated by the MRC committee involved, but so far as I know without avail.

I think he will be remembered best, and wish to be, as a pioneer in making moderate numbers based on sound opinions a respectable scientific enterprise.

KATHLEEN EVANS

I worked with Cedric for more than 25 years and shall always remember him for his humility and modesty. In work he was generous with time and help for others, whoever they were, and sat with his door wide open for all to interrupt him and was not put out by this. He was curiously single minded, seeing his objectives clearly and pursuing them rigorously. No amount of data collected during a study overwhelmed him; he could put his finger on the relevant parts unhesitatingly and was not sidetracked into extraneous aspects. As a person he was shy but kind, fair, and courteous, and though critical of other people's work, he was also critical of his own.

Those of us who worked with him grew very fond of him. It took a long time to get to know him well but we always knew that he would unfailingly support and back us as members of his team. We appreciated that he valued intelligence but, even those of us not greatly blessed in this direction, knew he also considered energy and enthusiasm worthwhile attributes. He always looked for mesomorphs when taking on workers.

JOHN FRASER ROBERTS

I got to know Cedric Carter very soon after I became Consultant in Medical Genetics at The Hospital for Sick Children, Great Ormond Street, in 1946. Initially he came to assist me at my clinics for genetic advice and I found him an increasingly valuable colleague. He had a first class mind and an enthusiastic interest in his work. I was delighted when in 1957 he joined me in the newly established Medical Research Council's Clinical Genetics Unit at the Institute of Child Health. In 1964 he succeeded me as Director of this Unit, where he remained until his retirement in 1982. Cedric was an ideal colleague and I shall always remember with great pleasure our collaboration over so many years.

He was a prodigious worker with an encyclopaedic memory who made many original and highly important contributions to the elucidation of the genetics of a large number of congenital malformations, including infantile pyloric stenosis, hare lip and cleft palate, club foot, spina bifida, anencephaly, and congenital dislocation of the hip. He was the first person to establish the excess of leukaemia in Down's syndrome patients, and this played an important part in directing attention to a possible chromosome anomaly. His observations on the excess of affected relatives among the kin of young mothers of Down's syndrome patients contributed in a similar way to the discovery of reciprocal translocation as a cause of familial mongolism. As a joint General Editor of the Oxford University Press Monographs on Medical Genetics, he was instrumental in securing a number of valuable books for the series and in helping the authors in their production.

SARAH HOLT

Cedric was one of the 30 participants at the Symposium at the Ciba Foundation on 6 November 1957 (an informal meeting) to discuss the need for an association 'devoted to the furtherance of human population biology in its various aspects—human evolution, human variability, human genetics, and human adaptability'. At the end of March 1958, I received a letter signed by eight interested persons (the 'ad hoc' committee), inviting me to join the Association for the Study of Human Biology. On accepting this invitation, I became a founder member of what later became the Society for the Study of Human Biology, together with 104 other invited persons from disciplines concerned with various aspects of the study of man, both normal and pathological. Strangely, though possibly through lack of time, Cedric, although a member of the Society, was not on the Committee when it was formed. The Society for the Study of Human

Biology has proved its worth and, to some extent at least, it may be considered a fitting memorial to Cedric.

[As I (CAC) said it is important not to forget differences of opinion. Sarah Holt also writes:]

The last time I saw Cedric before my retirement was when he came to see me at the Galton Laboratory. After a friendly talk, we had tea in the staff common-room and I well remember him saying: "Sarah, you are not going to like what I am going to say to you". He then went on to say that he did not think dermatoglyphs were useful in the diagnosis and study of Down's syndrome.

SYLVIA LAWLER

I did not know Cedric very well. You are of course aware that in my day Galtonians did not approve of Eugenists. However, we were able to take advantage of Cedric's progeny when we found a -D- allele in his wife. The whole family were most cooperative and friendly to me when I visited them for blood letting.

URSULA MITTWOCH

I was very sad to hear of Cedric Carter's death. I always regarded him as a physician and a geneticist who set himself the highest standards in both fields. He devoted his life not just to improving the health of the present generation but also of future generations; at the same time he advanced our knowledge of human genetics. His death, so soon after his retirement, is a real loss.

MARCUS PEMBREY

On the occasion of Cedric's retirement from the Institute, knowing his new-found interest in marathon running, we gave him a track suit with his family pedigree embroidered on the back, which caused some amusement. My secretary, Elizabeth Lord, and Rebecca Coffey, a Research Officer here, actually saw him wearing it in a half-marathon near Colchester. Two days before he died he ran a full marathon, and it seems that he had had 'silent' ischaemic heart disease for some time.

On a purely personal note, I can remember the first time Cedric took me seriously was in the early 1970s. We met at a Eugenics Society symposium at the zoo and he told me to give up medical politics and get on with some clinical genetics. Shades of Liverpool days!

It is difficult to pick out any particular academic points but I do remember he had a healthy distrust of mathematical models of complicated forms of multifactorial inheritance, indicating that it was much better to devote one's time to getting reliable

data. I think his family study data, the full details of which were generally published after his papers, will outlast the model makers.

JOAN SLACK

I am very grateful for the help he gave me personally when I joined Dr John Fraser Roberts's MRC Clinical Genetics Unit enabling me to combine family life with a career in clinical genetics.

He was particularly proud of his large and intelligent family. His paper on the high reproductive rate of the Winchester scholars is not very well known and reflects his interest in this.

OTTO WOLFF

[Extracts from Otto's speech at Cedric's farewell party at the Institute of Child Health, on 30 September 1982.]

Cedric's curriculum vitae is a splendid document. Winchester, Oxford, St Thomas's, distinguished service in the Army, author of three text books, 30 chapters, about 100 review articles and innumerable original articles, and chairman and/or member of many national and international working parties and scientific societies. He was Director of the MRC Clinical Genetics Unit at the Institute of Child Health, Professor of Clinical Genetics in the University of London, founder of the Clinical Genetics Society, and very active in the affairs of the Eugenics Society. Among many prizes, an exceptional one was the Gold Medal for Services to

Paediatrics from the Children's Hospital of Philadelphia in 1971.

You can see that Cedric had good genes but unlike some people of unusually high intelligence who seem to lack humanity and generosity, he had a warm heart and a strong sense of responsibility. For instance, he felt it his duty not to keep his excellent genes to himself but to ensure that future generations should benefit from them. He therefore decided to become the father of seven children. This is a natural moment to mention his wife Peggy because I understand that not even Cedric had the genetic knowhow to bring seven children into this world without the assistance of a good woman. I know that all seven are again of outstanding intelligence. If my limited understanding of genes is correct, and as I have learnt it all from Cedric I must be right, then I conclude that Peggy's genes must also be worth having. I do not wish to exaggerate Cedric's and Peggy's selflessness. It would, I am sure, be wrong to suggest that their only reason for having seven children was to ensure that future generations would benefit. I believe they actually enjoyed having seven children; to those of us who find it quite difficult to bring up successfully one or two this seems remarkable, but Cedric and Peggy have an unlimited capacity for affection and for caring. There is another selfish reason for having seven children. I am told that seven is the smallest number on which it is possible to carry out meaningful studies of the inheritance of various human characteristics.