Michael George Parke Stoker
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It was a discussion over coffee forty years ago at the Imperial Cancer Research Fund (ICRF) Laboratory in London. A group of young researchers, deprecating the productivity of a well known biologist, was quietly interrupted by the Fund's director, Michael Stoker, who pointed out that the object of their criticism had made two distinct contributions that had both changed her field of research. He added that, if any of the disparagers achieved the same, they should consider their careers a success. Stoker's own career, which did much to place Britain at the forefront of research into both virology and cancer, clearly attained this benchmark.

Michael Stoker, the son of a medical practitioner, had little initial enthusiasm for medicine but decided to study it as the least unattractive of the career options suggested by his father. He was, however, immediately stimulated by the teaching he received in Cambridge and he completed his qualification at St Thomas' Hospital in 1942, amid the upheaval of the Second World War. The global conflict, which caused dramatic changes in so many lives, saw Michael drafted into the Royal Army Medical Corps and posted to India in 1943. After a year of clinical practice he was assigned as Medical Officer to a Ghurka column in Orde Wingate's Chindits and prepared to be dropped behind enemy lines in Burma, a highly dangerous operation, fortunately cancelled because of the Japanese retreat.

With the Chindits disbanded, Michael pursued a developing interest in laboratory medicine at the Central Military Pathology Laboratory in Poona (modern day Pune). There he worked at the Base Typhus Research Unit, initially under the tutelage of Ronald Seaton from the Liverpool School of Tropical Medicine. He considered this introduction to research as the most formative period of his career, his work on typhus earning him a Cambridge MD and it was to Cambridge that he returned after demobilisation in 1947, becoming a lecturer in the Department of Pathology and Fellow of Clare College.

There he initially continued his work on typhus-like diseases but switched to examining Herpes simplex virus infections, an interest that led him to contact colleagues elsewhere in the University who were working on the emerging science of virology. These included electron microscopists at the Cavendish Laboratory, where he also befriended leading molecular biologists, such as Perutz, Kendrew, Watson and Crick. Work on the viruses of bacteria had made an important contribution to the "new biology" espoused by these pioneers, because in 1952 it confirmed DNA as the chemical determinant of inheritance, the year before Crick and Watson elucidated DNA's structure. Michael and others appreciated that the recent development of techniques to grow viruses in cultured animal cells would enable the concepts and quantitative methods of bacterial virology to be applied to animal viruses. As he learned during a 6 month stay in Renato Dulbecco's Caltech laboratory in 1958, infecting cell cultures with some cancer causing viruses could lead to changed cell behaviour and proliferation in a focal fashion that resembled cancerous change. In 1959 he took these lessons to the University of Glasgow, where he became Britain's first Professor of Virology at the newly established Institute of Virology and director of the cognate Medical Research Council Virology Unit.

Glasgow in the 1960s provided fertile soil for the flowering of virology. The Professor of Genetics, Guido Pontecorvo (Ponte) was internationally renowned for his genetic analysis of the fungus Aspergillus, providing concepts that could be applied to the genetics of animal cells, whilst cell biology expertise was available from John Paul and, later, Adam Curtis. At the Veterinary School Bill Jarrett led work on tumour-inducing viruses of cattle and, in the middle of the decade, Bill and his brother Os used the Institute of Virology's facilities to identify and isolate the virus causing feline leukaemia, a finding with significant implications for the subsequent discoveries of viral causes for human cancers.

In this favourable environment, Michel Stoker, with his colleague Ian Macpherson, examined the mechanisms by which tumour viruses transformed cells in culture to the quasi-cancerous state that had first been observed in Dulbecco's laboratory. A major initial advance was the derivation of a line of immortal cells that were otherwise normal in growth and behaviour. These cells could be grown in bulk (and were thus used to produce the first vaccine against foot and mouth disease virus) and they could also be converted by tumour virus infection to grow and behave like tumour
cells. This reproducible system was used by Michael, during the most productive phase of his personal research career, to analyse the nature of tumour cells by contrasting these virally transformed cells with their normal predecessors. Other colleagues used these, and similar cell systems to pin down the genetic basis for virus-induced transformation, reasoning that, if cancers in general resulted from stable genetic changes to the cells of tumours, it would be difficult to find the affected genes among the many thousands in complex animals. Some laboratory tumour viruses, in contrast, only contained enough genetic material for a few genes and, if one or more of these was responsible for cancer and could be identified, the problem was simplified. In the words of one contemporary, it went “from looking for a needle in a haystack to looking at haystacks full of needles.” The research initiated by Michael and colleagues in Glasgow contributed greatly to these ends.

The Glasgow years also revealed Michael's talent as a scientific leader. The Institute of Virology was very well resourced and covered a wide range of expertise, from Donald Ritchie's work on bacterial viruses to Morag Timbury's clinical virology. Other experts recruited by Michael included Peter Wildy, Kenny Fraser, Lionel Crawford and John Subak-Sharpe and all the above became Fellows of the RSE and achieved distinction in other ways. The Institute rapidly became a major international centre for virology, outstanding for its teaching and research and attracting visitors from all over the world. Not surprisingly, Michael's skills in spotting and leading talent were noticed by ICRF (now the London Research Institute of Cancer Research UK) and, in 1968, he became its Director of Research.

Michael was undaunted by taking the reins of a laboratory that was more than five times the size of the Institute of Virology and in need of new directions in its research. He disbanded much of ICRF's hierarchical structure and introduced smaller interactive but potentially competitive groups, many with interests allied to those he had initiated in Glasgow. Ian Macpherson and Lionel Crawford accompanied him to London and, with new colleagues, the cell and molecular biology of cancer became a major focus. In the next decade ICRF was among the leading laboratories in the world to fulfil the promise of tumour viruses to be the key to revealing the genetic basis of cancer. As in Glasgow, the research was enhanced by eminent visiting workers, two of whom, Paul Berg and Harold Varmus, would later win Nobel Prizes but, unlike Glasgow, the greater resources of ICRF allowed Michael to augment up-and-coming talent with those already at the top of their field. These included Renato Dulbecco, another Nobel laureate and the world's leading tumour virologist and John Cairns, former director of the prestigious Cold Spring Harbor Laboratory, both of whom introduced new areas of research which further enhanced the Fund's international reputation.

Much of Michael Stoker's personal success could, however, be attributed to three close colleagues on whom he relied daily. Perhaps the most significant was Bill House, who, as Chief Technician, was responsible for the excellent resources at the Institute of Virology and then oversaw the expansion and smooth running of facilities at ICRF, eventual becoming Assistant Director for Research Services under Michael's successor, Walter Bodmer. Bill's work ethic has been acknowledged as an inspiration by his son Stephen (the current Chief Constable of Police Scotland), whilst Michael credited Bill's management skills with allowing him to continue personal research. An eminent European scientist, seeking Michael's advice on how he should lead a major laboratory, was told he “needed a Bill House.”

John Tooze, former Deputy Editor of Nature, also eased the Director's burden, keeping him informed of developments in research and helping to monitor the Fund's output. With much administration thus devolved to trusted colleagues, Michael was able to spend some time on laboratory work and here he was aided by his collaborator, Joyce Taylor-Papadimitriou. Together they embarked on the difficult task of culturing normal and malignant cells from human breast and examining their behaviour, with particular emphasis on how communication between cells was altered in cancer.

Michael later devoted more time to this work by adopting what he called the “Pontecorvo solution”. Ponte, irked by the administration and university politics associated with the Glasgow Chair in Genetics, had resigned at the age of 61 to accompany Michael to ICRF. There he worked in a very small laboratory, on his own but relishing the intellectual jousting with colleagues around him, and developing techniques to fuse together animal cells, an advance that was seminal to progressing the genetics of these cells. Michael shared Ponte's belief that scientists over the age of 60 should
cease to control, but not necessarily cease to influence, the work of their colleagues and in 1979 he too retired to a small laboratory. This was in the Department of Pathology in Cambridge, where Michael's career had first developed and which was now headed by his former colleague, Peter Wildy. I suspect Michael always regarded Cambridge as his intellectual home and there he continued to study normal and neoplastic breast cells until 1990. His final discovery was of a molecule produced by some connective tissue breast cells which he dubbed “scatter factor” because it induced epithelial cells to break contact with one another and disperse. This factor, shown to be identical to the hepatocyte growth factor found by others, is now being tested for clinical applications.

In many ways Michael Stoker's character could appear paradoxical. He was driven to succeed, yet he was a modest man, at pains to give credit to others where it was due. He was clearly excited about research but his emotional responses to triumph and tribulation seemed to range only from moderate interest to mild annoyance and he seldom gave an opinion without pausing to consider his words (a trait that, incidentally, did not flatter him when he appeared in a radio Any Questions programme, where the quick, if glib response would have been preferable). He was egalitarian and tried to mix with his staff on a first name basis but soon realised that, although graduate students might appreciate his company over morning coffee in Glasgow, that was emphatically not the case for the cleaning staff. Importantly, he was adept at using tact to achieve consensus but was also unwilling to dissemble, sometimes to the frustration of the public relations staff at ICRF. At one press conference he was asked the inevitable but almost unanswerable question on when cancer would be cured. He replied “Not in my lifetime, probably not in my children’s lifetime but perhaps in their children’s lifetime.” It was a response that, so far, seems prescient but it was not the promise of imminent success that the ICRF press office hoped for.

These qualities, however, made him a leader among scientists and he not only engendered loyalty and enthusiasm in his staff but also made lifelong friendships with eminent colleagues worldwide. This network served him well in his role as Vice President and Foreign Secretary of the Royal Society from 1976 to 1981. His talents in this area were exemplified when he led a group of cancer experts on a British Council sponsored visit to Czechoslovakia (where he had several contacts) a few years after Russian troops in 1968 crushed the Prague Spring. He managed to deal with government dignitaries in public and with disaffected rank and file academics in private without offending either group yet also without compromising the integrity of his view on the situation in that then unhappy country. I am certain that no other member of our party could have achieved this difficult balancing act.

In truth, much of Michael Stoker's life was a balancing act, with the weight of demanding jobs being offset by the counterbalance of a stable family life and, in particular, the support of his wife. Michael married Veronica English in 1942 but war parted them a year later, with Veronica pregnant and Michael did not meet his first son until late 1946. By the time they moved to Glasgow they had two daughters and three sons and the University initially housed this large family in a 28 room professor's house in The Square (now University offices). With far more space than even they needed, a superfluous room was used to build one of the earliest Mirror dinghies, sailing being a hobby through most of Michael's life. They later moved to Helensburgh, inuring Michael to the daily train journeys which would also be a feature of his life in London and during which he claimed to do much of his writing. The acquisition of a cottage on Lismore provided both the challenge of renovation and family holidays and it remains in the family today.

For Veronica and the children the challenges posed by Michael's career were frequent absences interspersed with the entertaining of eminent visitors, friends and staff, all of this in a total of 14 homes that the Stokers shared during 62 years of married life. In later years, what must have been a considerable burden for Veronica became more enjoyable. Michael's eminence was recognised in the award of CBE in 1974, a knighthood in 1980 and, in the same year, he was elected President of Clare Hall Cambridge (a foundation for senior scholars and Fellows) a post he held for seven years. Veronica and Michael lived in the President's residence and he recalled this as perhaps the happiest period of their lives, both of them enjoying the stimulating company of the Fellowship.
Michael Stoker's research career, like those of Ponte and the biologist criticised by the young researchers at ICRF, recalls an era when original minds, working in small groups, could produce major insights. It was also a time when a researcher's worth could be assessed over the long term rather than a three or five year span and we will not see those times again. What will, however, remain timeless and essential are the qualities of scientific judgement and leadership that are the other hallmark of Michael Stoker's legacy.

John Wyke