



## Interview with Professor Cedric Mims - Medical microbiologist and writer

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**Interview Synopsis:** Cedric Arthur Mims was born in London in 1924 to a tax inspector/lay preacher father and homemaker mother. Cedric's parents insisted on strict religious tutelage for Cedric and his sister and two brothers, though the extent of this parental preparation would sadly be limited by the misfortune which struck the family when Cedric was just six - his then pregnant mother died of an infection, and a few months later his father died of pneumonia. The Mims children then spent some years precariously perched, partly in orphanages and the rest of their young lives with assorted relatives. With improving fortune, Cedric went to Mill Hill School, which provided him with a sound and settled education for the rest of his school days.



Cedric had set his heart set on studying medicine but his business-man grandfather, as his guardian, refused to countenance this. However, he did compromise to the extent of allowing Cedric to enrol in chemistry at University College London, with the expectation that Cedric would become an industrial chemist and from there make his way into corporate industry. Cedric quietly added zoology units to his science studies, to keep his dream of medicine alive. He graduated four years later with the then rare achievement of first class honours, and the distinction of having had among his teachers JBS Haldane and GP Wells (son of HG Wells).

As he graduated BSc, Cedric now aged 21, exercised his legal independence from his grandfather to enter medicine, enrolling at Middlesex Hospital Medical School. He graduated from there in 1952.

Cedric then began his way up the career ladder of a bright young medical graduate. But as he did this, he came across a book on the biology of gorillas in the wild, a subject which seized his imagination. With his developing array of skills in science and medicine, he soon found himself in Uganda with the Colonial Medical Service, investigating tropical fevers. Happily too at this time, Cedric met and married Vicki, a nurse-manager from Middlesex Hospital. They stayed in Africa for three years.

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The Rockefeller Institute at Entebbe in Uganda was undoubtedly pleased to have Cedric's mix of skills in clinical medicine, immunology, and chemistry. Research in environmental medicine and epidemiology were beginning to open up the important intersections between humans, primates, viruses, and host insects, providing the means for exploration of diseases which increasingly were threats to humans and to wild and domesticated animals. In Entebbe, Cedric became close friends with John Cairns, who had similar interests to Cedric. Cairns was visiting from the Walter and Eliza Hall Institute in Melbourne, where he was expanding his own skills under Macfarlane Burnett's guidance. Cairns alerted Cedric to new developments in medical sciences occurring in Australia, in particular the virology studies of Frank Fenner (famously involving myxomatosis and smallpox) at the John Curtin School of Medical Research, at ANU in Canberra. Cairns enthused over the generous resourcing of the newly formed ANU (a research university in those days, modelled on the best research universities in the US) and its nascent medical research school.

Within a year Cedric had a faculty place with Fenner's JCSMR, where he would remain for the next 16 years (to 1969) devising new and key analytical methods based on immunofluorescence labelling of the proteins and polysaccharides associated with viruses and bacteria. From such chemistry came the means not only to detect particular agents, but also to probe the intracellular dynamics of pathogenic microbes during their propagation within host humans and animals, both in individual host cells and in host populations.

At ANU, Cedric's interests necessarily moved from pathogenic tropical microbes of the sort he was familiar with in Africa, to viruses and bacteria well represented in Australia, or containable within hosts that do not readily infect and harm humans - influenza virus, pox viruses, cytomegaloviruses for example. In a strange coincidence, just before he left Uganda for Canberra, Cedric contracted a serious case of Rift Valley fever, leaving him seriously ill for several months and his blood full of antibody to the virus. It is the only time Cedric contracted a laboratory-acquired infection in the many decades he worked with pathogenic microbes - a testament to his luck as much as to his technical skills, according to Cedric.

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As Chancellor of ANU, Howard Florey insisted that the ANU provide a generous study leave scheme for its scientists. The "tyranny of distance" which traditionally afflicts Australian scholars could partly be overcome by providing time and funds for ANU staff to travel overseas to research centres to meet and work with

international experts, or even to join in longer collaborations. And if necessary bring experts to ANU to work or explore ideas during extended periods in Canberra.

In 1962, Cedric joined Nobel Laureate John Enders, in the Children's Hospital in Boston, to work on measles virus, a visit from which Cedric gained considerable benefit. Several years later Cedric visited Ian Marshall, a JCSMR scientist running a WHO project in PNG on mosquito-borne infections, and with Nobel Laureate Carlton Gajdusek who had discovered the disease known as *kuru*, which is transmitted by way of cannibalistic rituals involving human brain tissue. The disease is similar to Creutzfeldt-Jacob syndrome seen in Europe, and to mad cow disease first seen in the UK. Later in England, Cedric met and collaborated with Stanley Prusiner, a US scientist who made the remarkable discovery that these *kuru*-like diseases are not viral in nature but are transmitted by *prions*, very small proteinaceous particles which contain no infectious DNA or RNA. Prusiner later won a Nobel Prize for this work, and visited ANU: Florey's ANU model of international experience working in both directions, as it were.

Cedric also took a year's study leave with Hilary Koprowski, at the Wistar Institute in Philadelphia, another invaluable experience for him.

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In 1972, Cedric returned to England to become Professor of Medical Microbiology at Guys Hospital, London, a position he held for the next 18 years. There he renewed contact with young minds, thriving on the opportunity to teach undergraduate medicine again, and writing two text-books on infectious disease and microbiology. These books became best-selling standards, running eventually to five editions each: *Pathogenesis of Infectious Disease*, now a book with multiple authors and in print more than 40 years; and his basic textbook: *Mims' Medical Microbiology*.

While at Guy's Hospital, Cedric became part of the Tropical Medicine section of the British Medical Research Council. This involvement took him on regular visits to African medical centres to provide advice and guidance on policy and management of teaching and research in these centres.

Cedric retired in 1990. He then began an intense period of writing which continues to the present day, updating his text books and producing novel accounts of the intersections of medicine, philosophy, and public health for the lay reader.

These books include:

- *When We Die: the Science, Culture, and Rituals of Death* (1998), including Netherlands and Japanese translations
- *The War Within Us: Everyman's Guide to Infection and Immunity* (2000), which was awarded the British Medical Association prize for the best popular science book of the year
- *Love and Old Age* (2003)
- *Fouling the Nest: Human Filth and Pollution* (2006)
- *The Story of Childbirth* (2007)
- *The Story of Food* (2008)
- *Celebrating the Human Hand* (2009)
- *Mightier than the Sword* (2014)
- *Lying, Walking, Running* (2014)
- *The Enchanting World of Smell* (2014)

Cedric's latest book ideas include one on the importance of gravity in biology and medicine.

To his published books should be added more than a 100 research papers which describe the specialist aspects of his research. In all, a notable record of scholarship in the medical sciences.

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Most of this new writing phase occurred after Cedric and Vicki returned to Canberra in 1999, where their children were by this time living. Their return to Australia ('the best country in the world' according to Cedric, who had lived and worked on four continents) also marked an honorary involvement for Cedric with the new medical school at ANU, and gave him the opportunity to explore his ideas about medical education. He prefers a system of teaching based on case presentation and small group interactions, guided by experienced practitioner-mentors. It is important, in Cedric's view, to bring medicine to life rather than to rely on written or spoken accounts.

Tragically, Vicki did not live to see the culmination of Cedric's latter day successes. After eight years of affliction, she died of Alzheimer's disease in 2006. Cedric was her primary carer in her final years.

Throughout his life, Cedric had, and has, significant extra-mural interests - as musician (he regularly plays classical guitar), as artist (he is a skilled etcher and draftsman), and as astronomer (with John Cairns, they separately cut, silvered and polished lenses for their own hand-made reflecting telescopes). These days, self-publishing his books is a skill that comes readily to him.

Cedric now surrounds himself with the affection and company of his four children (all born in Africa or Australia, and now Australian citizens) and his twelve grandchildren and six great-grandchildren. Cedric's children themselves reflect the tendencies of their parents -one doctor, one vet, one nurse, and one teacher of handicapped children.

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