

It did not take long to show that cold viruses are physically related to poliovirus, but differ in the sensitivity of their infectivity to low pH. This made sense because cold viruses cause respiratory infections and do not have to withstand gastric acidity. The characterization of the viral genome — an infectious, single strand of RNA — was published in *Nature* (204, 792–794; 1966).

I was recruited to the CCU by Andrewes in 1961, to characterize the fundamental nature of cold (now rhino-) viruses. Being at the CCU was a steep learning curve for a young scientist — I was expected to master viral biochemistry and biophysics, and become familiar with clinical virology. In addition, the international reputation of the CCU ensured a stream of eminent visitors to rural England from countries around the world, from the United States to the Soviet Union. Each member of staff, even the newest recruit, was expected to tell these luminaries their latest findings. The world's press also paid an annual visit. Meanwhile Andrewes, who had retired and come to live nearby, often dropped in, timing his visits for tea and cucumber sandwiches, which were the norm in those days! Andrewes was a consummate raconteur who demanded an audience, but not reciprocity.

Does the book work? Yes, because Tyrrell and Fielder write sound but instantly understandable science. However, the core of the book is made up of Tyrrell's personal insights during the time that he presided over the CCU as the clinician-scientist. He was renowned for his hard work, boundless enthusiasm and encouragement to all those around him. Everyone who worked at the CCU could add his or her own reminiscences of what was a very interesting place at which to work and, for most of us, to live. Personally I owe Tyrrell an enormous debt for his sympathetic help with my PhD studies.

This is a history of science over the past 50 or so years — a science that is almost unrecognizable now — and an account of how a great many scientists, clinicians, lay staff and volunteers made a huge contribution to the understanding of the common cold, but sadly formulated no cure. But what of the demise of the CCU? We are told simply that it outlived its usefulness and was closed in 1990. It would have been good to know why. Was this just misguided short-termism, and if it had it become too expensive, why was no public-private partnership (with the pharmaceutical industry?) put in place to save such a valuable clinical-trial facility? The site is now a housing development; at its entrance on the Blandford road, a small plaque notes that here the CCU was once located. ■

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Science in culture

Time will tell

DNA is used as a symbol of hopes and fears in the genetic revolution.

Martin Kemp

A human figure, naked and male (as far as we can tell in the absence of genitals), turns his face and the palms of his hands to the heavens, like one of the ascending elect in Michelangelo's painting *Last Judgement*. Standing atop the kind of classical column reserved for military heroes, he adopts a space-filling pose reminiscent of Leonardo da Vinci's famous man tracing the figures of a square and circle with outstretched limbs. He is fringed by a halo of light that obeys none of the laws of terrestrial optics.

This was the image that appeared on the cover of *Time* magazine on 17 January 1994. It now features in the exhibition "Representations of the Double Helix", curated by Soraya de Chadarevian and Harmke Kamminga at the Whipple Museum of the History of Science in Cambridge, UK. The cover draws attention to an article inside on "The Genetic Revolution" by Philip Elmer-Dewitt, subtitled "New technology enables us to improve on nature. How far should we go?" Francis Collins of the US National Institutes of Health (now director of the National Human Genome Research Institute) was cited as comparing the challenge with splitting the atom or going to the Moon.

The centrality of DNA to the genetic quest is signalled by its spiralling presence in the figure's thorax and abdomen, reminiscent of a giant structural spine. It is assumed to be an instantly identifiable icon for *Time*'s international readership, recognized even when, as here, the helices twist in the wrong direction. It would be interesting to take a census of how often this reversal has occurred in the 50-year iconography of the great molecule.

We read on the cover that "New breakthroughs can cure diseases and save lives" — a promise that has been more hyped than realized — but the positive connotations are anxiously tempered by the question "how much should nature be engineered?" The eerie, night-time atmosphere here of the cover evokes a science-fiction realm in which excitement and fear are mingled, *Frankenstein*-like.

Such is the fame of DNA that it has featured on at least three other *Time* covers over a 32-year span: 19 March 1971, 13 September 1999 and 17 February 2003 (in the US edition, but 3 March 2003 in Europe). The most recent of these shows a modern Adam and Eve standing wreathed in golden helices that branch aloft into a fruiting tree of life (or of sinful knowledge?). The lead article on this occasion, written by Nancy Gibbs, deals with "The Secret of Life", and aims to show how "Cracking the DNA code has changed how we live, heal, eat and imagine the future".

We take the familiarity of DNA so much for granted that it is difficult to see its high profile as exceptional. How many abbreviated chemical names mean anything in the broader public domain? H₂O and O₂ are familiar enough, and CO₂ has gained prominence in relation to global warming. All three have oxygen in common, which seemed to hold the promise of the secret of life in the late eighteenth and early nineteenth centuries. Like AIDS, HIV and, perhaps, BSE, its acronymic identity has achieved independence from any widespread awareness of its full name or chemistry.

The triumphant story of DNA is marked by signposts that become selectively significant when we retrospectively know where history was taking us. As Robert Olby showed in his recent article in *Nature* (421, 402–405; 2003), the great majority of papers on DNA up to 1960 made no mention of James Watson and Francis Crick's structure (*Nature* 171, 737–738; 1953) — it remained something of a 'sleeping beauty'. The laconic visual and verbal presentation of their paper, which was a factor in its slow rise to fame, seems astonishing in retrospect, but we would do well to remember Watson and Crick's acknowledgement that "The previously published X-ray data ... are insufficient for a rigorous test of our structure. So far as we can tell, it is roughly compatible with the experimental data, but it must be regarded as unproved until it has been checked against more exact results."

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Cover star: the DNA double helix has become an icon of our times.