

# CURRENT SCIENCE

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EDITORIAL

## John Maddox: Promoting Science Through *Nature*

A few years ago, the turn of the century saw an explosion of writing looking retrospectively at the events of the period between 1900 and 2000. In 2003, a little book appeared, entitled *A Century of Nature* (L. Garwin and T. Lincoln, University of Chicago Press). To the undiscerning browser the title might have led to the conclusion that here was another book for the naturalist. The subtitle *Twenty one discoveries that changed science and the world*, establishes that this is a compendium of 21 papers from the pages of the science journal *Nature*, which are among the reports that defined the face of 20th century science. These papers are reproduced along with extremely readable 'explanatory essays', which provide a historical context for each major scientific advance featured in this collection. The book must be required reading for all those practising science and everyone else who is interested in the development of science and its place in furthering our understanding of the physical and natural worlds and ourselves. Of the 21 chosen articles, eight belong to the periods 1966–1973 and 1980–1995 when John Maddox was at the helm at *Nature*. Among these classics, we find the discoveries of pulsars (A. Hewish), reverse transcription which established that information in biology can flow from RNA to DNA (D. Baltimore and H. Temin), magnetic resonance imaging, then called zeugmatography (P. Lauterbur), the ozone hole (J. C. Farman, B. G. Gardiner and J. D. Shanklin), buckminsterfullerene, the C<sub>60</sub> molecule, to be later described as the 'celestial sphere that fell to earth' (H. W. Kroto, R. F. Curl and R. E. Smalley) and the effects of mutation on development (C. Nusslein-Volhard and E. Wieschaus). The position of *Nature* as arguably the most influential publication in the world of contemporary science was established during the Maddox years. When Maddox began, *Nature* was considered as a 'science magazine' occupying a niche that was distinctly different from the staid, conservative journals produced by scientific societies. When he died on 12 April, the world of science journals lost one of the key figures in the transformation of science publishing, which took place in the 1980s and 1990s.

*Nature* is an unabashedly commercial enterprise. But its success and influence, in recent times, stem not from its circulation and revenue, but from the esteem in which

it is held by authors and readers and from an editorial tradition that stretches over a century. Maddox transformed the journal even as science itself underwent dramatic changes in the last decades of the twentieth century. Although *Nature* is in every way an attractive model for an interdisciplinary science journal, its pages are not always readily opened to disciplines that seem to attract limited general attention. Biology, molecular, cellular and structural, the earth sciences and climate, astronomy and astrophysics are favoured subjects. Chemistry and many areas of physics are rarely featured on *Nature*'s pages, although these are disciplines in which a large number of journals and authors are to be found. Biochemistry, a once valued discipline and a forerunner of molecular biology was not too long ago magisterially dismissed in a *Nature* editorial as a subject 'associated primarily with the study of enzyme kinetics' (3 August 2006). In his preface to *A Century of Nature*, Steven Weinberg wryly notes: 'In this collection of articles from *Nature* one can read seminal articles from every field of twentieth century science. Every field, that is, except my own: elementary particle theory. For some reason particle physicists rarely submit their work to *Science* or *Nature*. (But *Nature* had its chance: Enrico Fermi submitted to *Nature* his great 1932 paper on the theory of beta decay, which founded the modern theory of weak interactions, but it was rejected).'

*Nature* came into existence in November 1869, published by Macmillan and edited by Norman Lockyer, who was at the helm for half a century. The journal's founding was aided by T. H. Huxley, then at the peak of his scientific influence. Lockyer was a colourful figure and his biography is entitled *Science and Controversy* (A. J. Meadows, MIT Press, 1972). His biographer notes: 'Lockyer like Huxley, thrived on controversy; but whereas Huxley generally came out the winner, Lockyer, in his scientific controversies at least, generally came out the loser'. It is in Lockyer's time that *Nature* established deep roots in the world of science, a periodical that allowed the communication of science to a broad audience and established a vehicle for communication between scientists; in a manner that seemed impossible in the conservative journals of the times. Lockyer's successor, Richard Gregory was to firmly establish *Nature* as the

journal in which many dramatic advances in science were recorded. He was aided in this task by the fact that in the period between the two World Wars, Britain and Germany were the two main centres of scientific activity. Gregory's criticism of the expulsion of Jewish scientists led to a decree banning *Nature* in Nazi Germany in 1937, a distinction of which the journal must be justly proud. The rapid rise of American science in the postwar world saw the emergence of a competitor, *Science*, the Journal of the American Association for the Advancement of Science, which today shares with *Nature* a preeminent position in the world of science journals. When the first editor of this journal, C. R. Narayan Rao began his effort to produce an interdisciplinary journal in India in the early 1930s, Richard Gregory was a strong supporter (*Current Science*, 2007, **92**, 5). *Nature* began in modest fashion in 1869. Lockyer undoubtedly an enthusiast and an optimist claimed that '*Nature* in the first year of its publication reached nearly 5000 subscribers ...'. His biographer notes that it was 'generally believed that Lockyer's estimate was a considerable exaggeration' and that the number 'may have been only between 100 and 200' (Meadows, p. 29).

John Maddox first came to *Nature* as editor in 1966, only the fourth editor in almost a hundred years. Lockyer had batted for fifty and Gregory for twenty years. In 1966 *Nature* was in the midst of a crisis that must seem familiar to editors, who enter to reverse the tide of decay. The most depressing sight in a journal's office (one that the electronic revolution has banished forever in most journals) are stacks of unattended manuscripts. In the 1960s Maddox found that the concept of peer review was not established at *Nature*. As the scientific enterprise expanded the cosy practice of informally consulting a few local eminences on the suitability of a manuscript did not seem practicable. In his parting editorial, *Valediction from an old hand*, Maddox repeats his apocryphal story of how the Watson-Crick paper on the DNA structure was accepted by *Nature* in 1953. A few phone calls to and by the then editor L. J. F. Brimble were enough to launch the double helix into history. Maddox describes a backlog of around 2000 manuscripts neatly stacked on a windowsill in the editor's office, 'arranged in piles, one for each month, providing a histogram of Brimble's problem soon to be mine. There were fourteen monthly piles when I first saw them' (J. Maddox, *Nature*, 1995, **378**, 521). Maddox, in retrospect, asks: 'The state of *Nature* in 1966 raises a raft of questions. Can, for example, a journal with such a reputation survive for long if scientific manuscripts are hardly ever refereed?'

Maddox engineered a remarkable turnaround. He introduced a brand of science journalism that was instantly attractive, boosting circulation and readership. Maddox introduced refereeing, although he noted in his last edito-

rial 'that the confidentiality of the refereeing process breaks down only when it is important that it should not'. He reveals that in his first editorial stint he decided never to send papers by Louis Leakey and Fred Hoyle to referees, on the ground that referees would invariably reject them. According to Maddox, Leakey 'provoked otherwise reasonable colleagues to declare his paper not to be publishable'. Hoyle, he said, 'entertained and instructed the readers of *Nature* on matters as different as the function of Stonehenge and the nature of the universe. Most referees found him, "unsound", often without saying why'. The outpouring of obituaries on Maddox emphasize his love of controversy, plunging headlong into debates on issues that had an impact on science and its practice. His attack on Rupert Sheldrake's book *A New Science of Life: The Hypothesis of Causative Formation* (Park Street Press, Rochester) was famously titled 'A book for burning?'. Readers who normally do not go beyond headlines, assumed that Maddox was suggesting that the book be burnt, although he did go on to say that 'even bad books should not be burnt'. Even in retirement Maddox returned to attack Sheldrake's more recent work *Dogs That Know When Their Owners Are Coming Home: And Other Unexplained Powers of Animals* (Crown, 1999). He begins his critique charging that Sheldrake 'is steadfastly incorrigible in the particular sense that he persists in error' (*Nature*, 1999, **401**, 849). The publication of the paper by Jacques Benveniste on the 'memory effect' in aqueous solution, in 1988, and his subsequent investigation using a team that included a magician is the most dramatic example of his provocative approach as an editor. In the string of tributes that have appeared, Maddox is remembered warmly by his colleagues. William Grimes, writing in *The New York Times* notes: 'His enthusiasms were often far ranging, intense and brief, and his fondness for 11th-hour editing could be unnerving. He was renowned for leaving *Nature*'s editorial page blank until the last possible moment, then sitting down with a secretary and dictating his contributions as the presses rolled'. Maddox challenged and provoked his readers. In a brief essay entitled 'Is biology now part of physics', he was critical of the biologists' reluctance to embrace the ways of physics and chemistry. A one liner at the head of the article says it all: 'Reductionism is almost a dirty word, especially in biology, but after thirty years of DNA, it is high time that biologists paid attention to the question of what constitutes an explanation' (*Nature*, 1983, **306**, 311). A quarter of a century later the situation has not changed dramatically. As a regular reader of *Nature* during much of the Maddox years, his writings always left me entertained and informed. This must surely be a sentiment shared by legions of readers whom Maddox has left behind.

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