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EDITORIAL

Creationism, Astrology and Science

'In the Middle Ages and almost up to Darwin's time, the world was believed to be constant and of short duration. But the credibility of this Christian worldview had already been weakened in some quarters by a series of scientific developments. The first of these was the Copernican Revolution which had removed the earth and its human inhabitants from the center of the cosmos and in the process demonstrated that not every statement in the Bible had to be interpreted literally. Second, the researches of geologists had revealed the great age of the earth, and, the discovery of extinct fossil faunas had refuted the theory that the earth's biota was unchanged since the creation Despite this and much more evidence . . . the more or less biblical worldview still prevailed up to 1859. . . . It may seem strange to us today, but the concept of evolution was alien to the Western world.'

Ernst Mayr in *This is Biology*, Harvard University Press, 1997 (Universities Press, India, 1999, p. 175).

In the almost one and a half centuries that have passed since Charles Darwin penned *The Origin of Species*, the wheel has turned the full circle. Last summer, the Kansas State Board of Education decided to remove references to evolution and cosmology from its curriculum, touching off a fresh round of debate on what constitutes essential science, that must be communicated to students. Kansas, of course, is the quintessential mid-Western state in the United States; a bastion of conservative thought. Soon thereafter, the American Association for the Advancement of Science (AAAS) joined issue, publishing a strong statement urging restoration of the teaching of evolution and cosmology and committed itself to 'work aggressively to oppose measures that could adversely affect the teaching of science, wherever they may occur' (*Science*, 1999, **286**, 1297). The subsequent debate that has been sparked reflects the many tensions that exist between the findings of science and the beliefs of religion (*Science*, 1999, **286**, 681; 2000, **289**, 869).

Science, religion and superstition coexist in our midst. For non-scientists the choices are often clear. For scien-

tists, particularly those familiar with evolutionary biology, faith in creationism appears completely irrational. Darwin's intellectual synthesis has passed many tests and 'common descent' removes humans from the pedestal they seek to occupy. Science appears relentless in its approach to explaining natural phenomena and brooks no interference from unknown and supernatural hands. A telling example is the story of 'vitalism', recounted in a recent essay (Gupta, S., *Nature*, 2000, **407**, 677). The popular belief, that organic substances of natural origin were imbued with a 'vital force', was effectively laid to rest by Friedrich Wohler's immortal synthesis of urea from ammonium cyanate. Wohler's dramatic announcement in a letter to his mentor Jons Jacob Berzelius marks a turning point in science: 'I must tell you that I can make urea without the use of kidneys, either man or dog'. But as Gupta points out in her perceptive essay, Berzelius 'vacillated between stances that are clearly supportive of a mystical vitalist force and others that are more accommodating of an atheistic materialism, which he generally abhorred. It appears that much of his energies as a chemist were engaged in the honest negotiation of a compromise between these two poles'. A century of scientific progress has, however, brought us to a point where one can legitimately ask, as Gupta does, 'whether life is greater than the sum of its parts'. The biological view of the human race has often been at odds with broader (and often, more imaginative) perspectives. A very recent commentary draws attention to Pierre Teilhard de Chardin and his book *The Phenomenon of Man*, which drew the ire of Peter Medawar, one of the most eminent and articulate biologists of the twentieth century. Teilhard, a French palaeontologist, was also a Jesuit priest and his views on the evolution of Man had the distinction of 'falling foul of both the Catholic church and the scientific orthodoxy' (Simmons, R. M., *Nature*, 2000, **407**, 839).

In the background of the ongoing debate on creationism in the West, we have the provocative report that the University Grants Commission (UGC) has decided to promote courses in astrology and palmistry. We would all like to know what the future has in store for us. Even the most rational amongst us cannot resist a peek at the 'Stars

this week' column in the Sunday papers, fondly hoping that some windfall might indeed come our way. But, astrology is not religion; it is a subject that comes cloaked in the garb of a pseudo-science, purporting to make definitive predictions on human affairs, based on planetary conjunctions. Astrology has no basis in planetary studies as practised by scientists. In a devastating critique, one of our most accomplished educationists and promoters of science, H. Narasimhaiah argues that astrology's 'superstructure is built on such wrong assumptions, that can never be considered as science by any stretch of imagination' (*Deccan Herald*, 21 October 2000). In a country where belief in 'auspicious times' is all pervasive, there may not be many takers for Narasimhaiah's viewpoint. However, one may still legitimately ask whether the UGC views astrology as a science and if it considers the teaching of astrology in Universities as an important determinant of this country's progress. Higher education in India is in a dismal state, with crumbling standards and decaying institutions across the country. For the UGC to even imagine that the introduction of astrology would be viewed as a 'new initiative', reflects very poorly on our decision-making bodies. In focusing on astrology at a time when higher education needs sustained and careful

attention the UGC appears to have followed the example of the Emperor Nero.

All of us undoubtedly, have an inalienable right to profess any faith and subscribe to any belief; but, superstition is best practised by individuals in private. The government must not provide a licence for the formal teaching of a subject, under the umbrella of our Universities, that only serves to mislead its believers. At times, when events appear to overtake us and we are swept along by circumstances outside our control, we would like to attribute our misfortunes to the planets. We might do well then to recall William Henley's exhortation in his poem *Invictus*:

*'It matters not how strait the gate,
How charged with punishments the scroll,
I am the master of my fate,
The captain of my Soul'.*

As in the fight against creationism, Indian scientific bodies have a responsibility to express a collective and reasoned view. The Academies and Associations must not adopt the expedient path.

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