

Threat to science from the White House

Concerns over the possible effect of the attitude of the Bush administration on the welfare of scientific research in the US have been raised in a leading article in *Nature* (23 February) in response to a report from the recent annual meeting of the American Association for the Advancement of Science, held in St Louis, at which several scientific leaders described with passion their views on the current fraught relationship between science and the political establishment.

The speakers included David Baltimore, a molecular biologist and Nobel laureate, who is outgoing president of the California Institute

of technology, president-elect of the American Association for the Advancement of Science and widely held to be the pre-eminent voice in the US scientific world. He suggested that the present attitude of the Bush administration towards science arises from adherence to a rigid political philosophy that threatens the essential independence of US science — the notion that the executive branch can order the US federal government as it sees fit, irrespective of the constitutional insistence on a balance of power between governmental executive function, Congress and the judiciary. Baltimore stressed that intellectual freedom is

essential in research, particularly freedom of enquiry. Official government agencies are not able to provide settings as liberal as those prevailing in universities, but government scientists must still be permitted to publish the results of their research as they see fit, and suggest how these argue for changes in policy from the politicians.

A case in point is the acceptance or denial of the phenomenon of climate change and its relationship with pollution by human industry. Recent evidence of a connection with destructive hurricanes is another bone of contention.

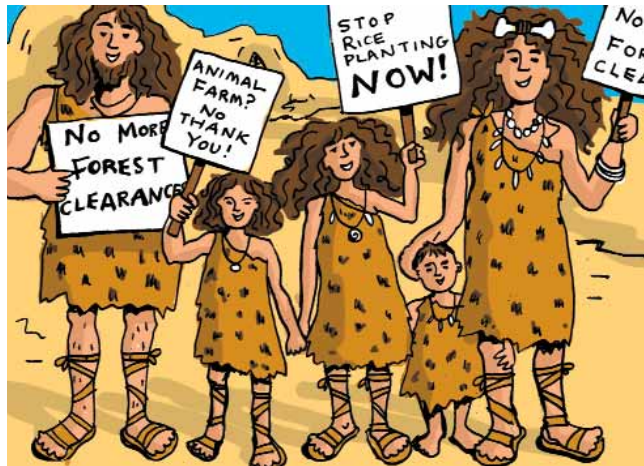
Neglect of climate is rooted in the distant past Fighting by the rules

We hear much about the deleterious effects of recent technologies on our world climate, but it seems that the phenomenon is not one that has only raised its head in modern times.

In the 27 January issue of *Science* is a review of a recent Princeton University Press publication, 'Plows, plagues and petroleum', by William F. Ruddiman. This propounds the hypothesis that as much as 6,000 to 8,000 years ago humans began to

add their quota of carbon dioxide and methane to the world's atmosphere by clearing forests, farming rice and raising animals on farms.

It is claimed that such activity averted a cyclical drop in the concentrations of these gases in the early stages, and that the added greenhouse gases arrested an ice age that would otherwise have affected us several thousand years ago instead of relatively recently.



The study of the earth's climate is still a young field and a place for argument. It is arguable that humans are in a position to supervise climate but have not yet developed the skill to exert any control over it. When our distant ancestors averted an earlier ice age they did it blindly, without any awareness of what they were doing. It is incumbent on us to make the effort to tackle future climatic developments and threats with fuller awareness of the nature of the task.

An interesting sidelight upon gladiatorial contests appears in the 25 February issue of *New Scientist*. The Roman arena, with its brutal hand-to-hand fighting, it appears, was not quite devoid of the principle of fair play.

A cemetery at Ephesus in Turkey has yielded the remains of a small group of gladiators and forensic examination has revealed that the savage violence and mutilation characteristic of some Roman battlefields were modified when the object was entertainment. When an audience, by turning up their thumbs, condemned a beaten gladiator to death he was often dragged, still living, out of the arena and humanely despatched by a hammer blow to the head.

The fighters themselves had to obey certain rules. Analysis of bones has shown injuries to the front of the skull from only a single type of weapon and a lack of evidence of multiple injuries and mutilation. Although most gladiators wore helmets, several had died from a blunt injury to the side of the head, suggesting a blow after the end of the fight. The findings dismiss the theory that a gladiatorial combat was a martial arts show rarely resulting in death. The fact that skulls were not subjected to repeated battering bears witness to the belief that strict discipline was observed during the event.

The psychological effect of stillbirth on fathers needs to be recognised

A study published in the February issue of the *British Journal of Psychiatry* reports that about one in 200 pregnancies in the UK result in a stillbirth. The serious psychological effects of such an event upon mothers is well established but much less is known about the effect on fathers. In a community-based study of parents faced by a stillbirth, examination was made for any reactivating stressor after the lapse of different periods. Case records were studied from three district general hospitals over a three-year period, and 38 pregnant couples whose previous pregnancy had

ended in stillbirth were compared with 38 pair-matched controls, psychological assessment being made at between 32 and 38 weeks' gestation and then at six weeks, six months and one year after the birth.

Fathers in the study group experienced significant anxiety and post-traumatic stress disorder before the birth of their child, which disappeared after a live baby had been born. By contrast, mothers continued to be more vulnerable than fathers to continuing psychological symptoms. At all the times when studied, the fathers showed lesser symptoms, but

in contrast to mothers showed greater anxiety when the pregnancy was delayed. The fathers' attitude was better if their partner conceived within a year of the stillbirth.

It is concluded that mothers need time to mourn and recover before repeating a pregnancy, whereas fathers' depression and anxiety tends to increase with greater lapse of time before they have a real prospect of again becoming a parent. Fathers need support in their own right and should not be regarded as merely an adjunct to their partner when it comes to childbirth.