

Animal experiments

SIR—Although I am not a neurobiologist and cannot judge critically the significance of the article (*Nature* 337, 265–267; 1989) referred to by Clive Hollands in his letter (*Nature* 339, 248; 1989), I am nonetheless as disturbed as he is about the level of suffering involved in the experiments the article describes.

Two developments are taking place in human thought that should make all scientists disturbed when they encounter experiments of this kind. The first is the growing realization, from neurobiological studies themselves as well as from other disciplines, that we share many of our cognitive and perceptual attributes with many members of the animal kingdom. This alone should give pause to anyone contemplating severely invasive experiments on sentient animals. The second is the philosophical analysis of the ethics of human–animal interrelationships. This relatively new aspect of normative philosophy is effectively undermining the cartesian view of nature that has for so long spuriously insulated the animal scientist from the ethical consequences of his or her actions.

These two developments are heightening the awareness of many biomedical scientists that each time they use a sentient creature in an experiment, they face an inescapable ethical dilemma, namely whether or not the benefits of the experiment can justify the suffering inflicted. The extent of this dilemma is arguably proportional to the capacity of the animal to suffer and is thus particularly acute where the overlap with human attributes is greatest, as in the higher primates.

In my view, because of these ethical considerations, Mr Hollands was justified in conflating animal experimentation with publishing, and why your editorial response (*Nature* 339, 324; 1989) was, at best, evasive. I contend that *Nature* can no more escape the moral responsibility when it publishes research involving animals than can the investigator. *Nature* has at the least a duty not to undermine the morality of the society in which it publishes. Indeed, it could be argued that it has a duty to promote it. The laws that govern the use of animals in experiments represent, even if only crudely, an ethical compromise between the arguments that on the one hand animal experiments are always evil and on the other that they are value-free. Deliberately to publish research from studies that fall short of the legal and hence ethical standards set by the journal's own country is a cynical evasion of those standards. It can be defended only if *Nature* takes the position that the present restrictions on animal experiments are themselves immoral, in which case it should say so openly. If it

does not, it should abide by them.

Publishing the results of unethical studies on animals is advantageous to the perpetrator and his career. It is specious to equate this with the coverage of demonstrations against governments, because this is done in the belief that free speech is a 'good' thing. Animal experiments that ignore humane guidelines are felt to be a 'bad' thing and publishing results from them, in effect, condones them. Would *Nature* publish results of experiments carried out unethically upon humans? Moreover, to argue that if *Nature* does not publish these articles others will is patently unprincipled.

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Anonymous authors

SIR—John Maddox's article on peer review (*Nature* 339, 11; 1989) reminds me of a proposal made by physicist Alfred Schild in 1959: "All scholarly organizations should accept for publication in their journals only those papers where the author remains anonymous. This would result in fewer and better papers being

published, those where the author (Anon. PhD) has something of real value to communicate."

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Mortality

SIR—We wish to correct a statement attributed to our company in an article entitled "Japanese doctors keep quiet" (*Nature* 339, 409; 1989) which says: "A spokesman for Kureha Chemical Industry, the company which developed Krestin, agrees that mortality of patients was not examined". In fact, "mortality of patients", which we understand to mean "survival rate of patients by randomized clinical trial", was examined many times, and the results of such examinations have been published^{1,2}. The clinical trials show evidence of increased survival when Krestin was given to cancer patients.

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1. Ohno, R. et al. *Cancer Immunol. Immunother.* **18**, 149–154 (1984)
2. Torisu, M. et al. in *Basic Mechanism and Clinical Treatment of Tumor Metastasis*. p.623–636 (Academic Press, London, 1985)

A letter from Greenpeace

SIR—The accusation in your leading article (15 June) that Greenpeace is, or has ever been, a terrorist organization is completely inaccurate. You have informed us that you did not intend to describe us as terrorists and there is no shred of evidence to support this allegation. In fact the reverse is the true position.

Greenpeace was founded on the principle of non-violence. We now have offices in 22 countries, and more than 3 million supporters around the world. In our 18 years of existence, Greenpeace has never advocated or condoned violence, nor been responsible for a violent action.

The allegation is particularly outrageous because Greenpeace has itself been the victim of violence directed against our employees. In the early 1970s, a Greenpeace boat, the *Vega*, was boarded by French marines while sailing in international waters, protesting against nuclear tests, and two of the crew were beaten up.

In 1985, the Greenpeace ship the *Rainbow Warrior* was sunk by bombs placed by French government agents, and a Greenpeace employee, Fernando Pereira, was killed.

Greenpeace respects the principles of scientific debate that a respected journal such as *Nature* fosters. We play an active part in encouraging scientific research on

environmental issues, employing scientists directly, and through support of scientists such as those funded by Greenpeace at Queen Mary College, University of London, and through modest grants for scientific research. We hope to encourage scientists to play an ever more active role in the current debate on environmental problems. We recently publicized a statement supported by over 100 scientists, including 16 fellows of the Royal Society, which said that the nuclear industry is wrong when it says that nuclear power has an important part to play in reducing emission of greenhouse gases, and which concluded that "nuclear power is irrelevant to the prevention of global warming".

We acknowledge your apology concerning the words used in your leading article of 15 June, and the donation you have made to the Trust Fund Greenpeace established to help support Fernando Pereira's widow and children. We look forward to future scientific debate, and to disagreements over how scientific data should be interpreted, but we can never accept unjustified and baseless attacks on the non-violent nature of our activities.

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