

Defence of diluted water

SIR — Is it an unease consequent upon its inept handling of the high dilution affair in 1988 that dictates that *Nature* cannot refrain from printing my name in close proximity to derogatory comments?

The latest example is H. Timmerman's letter (*Nature* 352, 751; 1991) which labels our work as "nonsense theories". He refers to my promise¹ "to [try to] publish in the months to come indisputable proof" for the high dilution effect and dismissively asserts: "I have not seen such a paper". It is symptomatic of the Dallasization of science that one scientist should dare publicly to imply that a colleague is a liar or incompetent or both without having had the decency to write to that person or adequately inform himself.

Even more surprising is the fact that *Nature* printed these comments knowing that it had refused an article reporting the production of our 1988 work under the direction of one of France's most respected biostatisticians (Professor Spira, INSERM U 292) and refrained from all comment when these data were recently published by the French Academy of Sciences² and, with similar ones, presented at the 1991 FASEB meeting^{3,4}.

A possible explanation for such odd behaviour on the part of a reputable journal is, ironically, to be found on the same page as Timmerman's letter. It is provided by E. J. Krowitz, who recalls Kuhn's concept of science as the triumph of expectations over reality.

In fact, our research has progressed. In more than 200 experiments on rat and guinea-pig isolated hearts, we obtained, using ten different highly dilute agonists, extremely significant vascular and mechanical effects. The cardiac effects were recently observed by an independent team of French pharmacologists. A note and an article are in preparation.

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1. Benveniste, J. *The Lancet* II, 944 (1990).
2. Benveniste, J. et al. *C. R. Acad. Sci. Paris* 312 série II, 461–466 (1991).
3. Benveniste, J. et al. *FASEB J.* 5, A1008 (1991).
4. Hadji, L. et al. *FASEB J.* 5, A1583 (1991).

■ The article submitted to *Nature* to which the author refers was rejected on the advice of two referees, who argued that the statistical analysis was flawed. The publication of ref. 2 took the form of a reply to an earlier article in the *Comptes Rendus*. — Editor, *Nature*.

British science

SIR — Your Manifesto for British Science (*Nature* 353, 105; 1991) is incorrect to suggest that the Ministry of Agriculture's contribution to the research programme of the Agricultural and Food Research Council (AFRC) is zero. True, the ministry no longer funds near-market work, but it currently contributes some £35 million a year towards AFRC research programmes.

Your manifesto also suggests the transfer of academic support functions in the agricultural, medical and natural environment research councils to the Science and Engineering Research Council and the incorporation of their 'rumps' as agencies of operational departments. This would be an unfortunate development. The institutes include some of the most outstanding scientific centres in the country, for example the Medical Research Council Laboratory of Molecular Biology at Cambridge and the AFRC Institute of Plant Sciences that includes the John Innes at Norwich. Furthermore, the mixed economy of institutes and university-based units and research projects provides both larger facilities and multidisciplinary groups together with the more flexible and smaller project grants. The future health of our research depends on the close interactions between these different groups and scientific programmes that cross the boundaries. Our own policy at the AFRC is to bring institutes and universities closer together rather than to separate them.

The whole question of the reorganization of the research council system was considered in detail some two years ago and rejected by the government in favour of reconstituting the Advisory Board for the Research Councils. Its remit includes in particular closer collaboration across research council boundaries within the present structures. Nothing would be achieved by re-opening this debate.

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SIR — It is the climate in British primary and secondary schools that has led to a dearth of aspirants to a scientific career and the inevitable consequences for the future of science in this country. Yet this comment passed tangentially at your public meeting on 13 September. The

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debate was tightly focused on the money, morale and means needed to undertake good science. Now that the "baleful influence" has left 10 Downing Street we are back to pleading with ministers.

It is disconcerting that, after all these years, the message from society is still misunderstood by a scientific community that should be listening, observing and drawing conclusions. The blame for the fact that society and its politicians are grossly ignorant of science cannot be effectively laid at their door. It is the responsibility of scientists to ensure that the case for research is well understood throughout the many strata of society, each in its different way. Research scientists have very special responsibilities and these are not limited to questioning the unknown in a systematic fashion. They extend to working to ensure that everyone is brought up to understand that science is the only way to safeguard the life, physical and cultural, that is so precious to us all. That has to be the true meaning of 'relevance'. Science has to be relevant to people.

The entire academic community has allowed an educational vacuum to be created all around itself and now research scientists, justifiably in need of public funding, plead for better understanding from those it has spurned in its obsessive search for excellence and commitment to short university courses. The programme of the Committee on the Public Understanding of Science may be conceptually correct but the audience, albeit raucous, is deaf. So, therefore, are ministers in a democracy. And so, it seems, is the scientific community.

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Direct action?

SIR — Neville J. Woolf (*Nature* 351, 10; 1991) proposes that the link between weak electromagnetic fields (EMFs) and cancer is indirect, through the formation of toxic chemicals in the air. But EMFs may well act on tissues directly by means of the common contaminant magnetite, ubiquitously present in the air as a ferromagnetic dust which, when inhaled or ingested, may be phagocytosed into cytoplasmic vesicles. When exposed to varying magnetic fields, phagocytosed magnetite dust may damage the vesicles and other structures and, being itself an auto-oxidation catalyst, may assault vital structures in the cell.

This model could easily be tested by exposing cells carrying magnetite dust in vesicles to varying magnetic fields.

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