

correspondence

Unreal Science

SIR,—As a qualified and practising scientist I wish to dissociate myself from your editorial of April 12. You allude to Geller and Velikovsky with terms like “nonsenses”, “beliefs beyond science”, and “pseudo-scientific ideas”, and contrast these with “real science” and “science based on conventional ideas about the way a scientific investigation should proceed”, and you declare that “scientists want to fight this distressing drift from the scientific way of thinking”.

History is littered with ideas shown to be false by people bold enough to question their contemporary conventional science, often in the face of personal ridicule and even persecution.

Presumably you class Einstein's relativity theory with ‘real’ science, yet to back his theory Einstein makes a couple of postulates, not yet proven, whilst the unreal Velikovsky quotes source after source and fact after fact to back his. Where Velikovsky leaps eagerly into the jig-saw puzzle of the past and fits piece after piece together (rather unscientifically perhaps, but incorrectly . . . ?) Einstein treads warily (and of course scientifically) through his mathematical maze, and deigns to emerge into the real world only at the end to explain Mercury's perihelion drift and to predict the deflection of light by the Sun. But wasn't there someone recently who found that the Sun was a little flatter than was previously thought which could account for half that drift (doesn't that make Einstein at least half wrong?), and isn't there someone else suggesting there's a planet, Vulcan, in there somewhere, or even maybe a whole asteroid belt? And just for one careless moment suppose that Velikovsky were right . . . no, of course—much too unscientific!

I am not saying Einstein is wrong and Velikovsky right, but I believe both men's theories worthy of serious consideration. You say “*Nature* has a responsibility (that) guides us in the choice of papers for publication”. You have a right and a duty to edit, but that statement smacks of censorship. Velikovsky encountered censorship. More recently Dingle has met similar problems for daring to question Einstein.

I am not young nor am I by any means a pseudo-scientist, nor are a number of colleagues who share my

opinion. I want no part in any science which operates with a closed mind, and I will encourage the young, and old, to drift from such a way of thinking, though I hardly need to. Your own editorial will do that well enough by itself.

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Cancer research

SIR,—Your correspondent Brian Ford comments (*Nature*, May 24) on the abundance of data and paucity of concepts in cancer research. A cursory survey of the literature strongly supports this point.

For example, 10 randomly chosen issues of *Excerpta Medica—Cancer* were found to cite about four thousand papers, of which a total of nine were classified as Theories of Carcinogenesis. It is as though 99.8% of the time taken to solve a jig-saw puzzle went on gathering heaps of pieces and 0.2% went on fitting the pieces together. This imbalance conflicts with the widespread belief that cancer research needs “more facts and fewer theories”. The opposite appears to be the case.

Yours faithfully,

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Geology \supset geophysics?

SIR,—The President of the Geological Society of London, the Director of the Institute of Geological Sciences and Professor P. Allen have informed us¹ “that geophysics is a necessary and important part of geology” and in case the reader misses the point they say it again “. . . of earth science, that is of geology.” That a present and past—and one hopes future—president of the oldest Geological Society in the world should so write is doubtless a Freudian slip, as earlier this century the society refused to take geophysics under its wing, this important task being faithfully discharged since then by the Royal Astronomical Society to the mystery of our friends abroad. In the Cambridge Tripos Part II twenty years ago the question was set: “Geophysics dots the i's and crosses the t's of geology. Comment.” I seem to recall that Professor Allen was an examiner. Perhaps those who simply answered

“But, of course” qualified for firsts!

I have always worked, as have your correspondents, for more understanding and dialogue between geophysicists and geologists, but also between geophysicists and astronomers and physicists: problems of the Earth's rotation, Earth and planetary magnetic and gravitational fields, solid state physics of interiors, lunar and planetary formation are of more interest to the latter groups than to geologists. Geologists on both sides of the Atlantic who suppose—perhaps understandably as the highways of earth science are presently congested by careering band-wagons—that continental drift, sea-floor spreading, plate tectonics and plumes is the whole of geophysics might do well to read again Sir Harold Jeffreys's *The Earth* or study Professor A. H. Cook's *Physics of the Earth and Planets*.

As Sir Peter Kent is also Chairman of the Natural Environment Research Council (NERC), it seems desirable to emphasise that geophysics is a discipline in its own right separate from—and one might add older than—geology. The NERC awards of research studentships for the Earth Sciences seem to me to be seriously overweighted² at present in favour of geology as against geophysics by about 7:1. This disparity does not reflect the relative need for highly trained people in these two disciplines nor the present intellectual challenges in the two subjects: it reflects the fact that there are some 45 departments of geology in British Universities.

Thus, as Chairman of the Royal Society committee which launched the European Geophysical Society, I welcome the 1975 “Europe from crust to core” meeting as a further step in European scientific cooperation. I hope that the formation of a ‘Pan-European Society of Earth Scientists’ (as distinct from a European geological society) is not seriously mooted if only on logistic grounds. Geophysicists interested in geological problems will surely come, as I hope to myself, to Reading and geologists concerned especially with tectonics will continue to join us at the European Geophysical Society's annual meetings.

Yours faithfully,

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¹ *Nature*, June 14, 249, 608 (1974).

² N.E.R.C. Research Studentships 1974.