Cartoon taken from *The Age of Intelligent Machines* edited by R. Kurzweil (MIT Press, 1992, $22.50 (pbk)).

of computer science, of artificial intelligence, and of cognitive science".

Because to my knowledge there are about 20 journals directly serving the AI research community (and probably as many again dealing with AI applications), you can guess my initial reaction. On reading the editor's preamble further I found: "This journal is published in the belief that, here as elsewhere, rational criticism is our most reliable tool in the unending search for truth." As one who is trained in a natural-science approach to truth seeking, though who has adopted computing as his working technique, I did not anticipate much value from the navel gazing that I expected to follow. In fact I was very impressed. I found many interesting and stimulating papers, the quality of which is uniformly excellent. As a source of careful reflection and scholarship, the journal cannot be faulted.

However, I am not quite sure who it is aimed at, nor whether it has a distinct market. Formal "logics of arguments" and "default reasoning"; thoughtful pieces on "the many uses of belief in AI", and reflections on what neural networks actually do, can be found in any number of established AI journals, and the distinctive contribution of philosophical analysis is not immediately obvious. Nor do I find the balance that I would expect in a philosophy journal. Logic and inference are very well served, but perception, consciousness, purpose and so on are hardly in evidence. AI scientists sometimes have an amateurish go at such topics, but philosophers have thought about them deeply and could make a real contribution.

I hope *Minds and Machines* makes it, but I think it needs to broaden its philosophical base and carve out a distinct methodological niche for itself.

Otherwise it will be just another AI journal and, given the competition, perhaps an unsuccessful one.   □

John Fox is in the Advanced Computation Laboratory, Imperial Cancer Research Fund, PO Box 123, Lincoln's Inn Fields, London WC2A 3PX, UK.

Neurocomputing

John A. Hertz

Network: Computation in Neural Systems. Honorary editor Daniel J. Amit. *IOP. 4/yr. US and Canada $376, elsewhere £175 (institutional); US and Canada $71, UK £30, elsewhere £33 (personal).*

THE renaissance of research on neural networks in the past decade has spawned a welter of new journals. Only a few of them will survive the next decade: *Network* stands a good chance of being one of these.

Like the other journals, *Network* aims for a broad coverage of the field. And like most of them, it ends up with a territory within the field and a particular flavour of its own, both reflecting the influence of its honorary editor, Daniel Amit. A theoretical physicist by background, Amit was among the first to apply the powerful techniques of modern statistical mechanics to formal neural-network problems. He then turned to doing this style of modelling in a real neurobiological setting. It is here that *Network* is strongest — theoretical papers of a high level of mathematical sophistication, confronting real data and trying to do an honest job of modelling neurobiological systems and phenomena. Of course, the jury is still out and in all probability will be out for many years on whether this enterprise succeeds, but if you want to learn about how far we've got, *Network* is the place to read about it.

The spectrum of papers is of course broader than this focal area of the intersection of statistical mechanics and neurobiology. The editors have tried to enhance the breadth further through a section in which abstracts of selected papers in other journals are reproduced, together with a paragraph or two of comments by members of the editorial board or their colleagues. It is admittedly a biased, but nevertheless a valuable, view of the field that one gets through this window, a judgement that also applies to the book reviews.

In addition to papers of normal length, *Network* solicits and publishes a few "Letters to the Editor" (rapid publication) and review articles. The letters will probably have a difficult time com-

peting with those in *Neural Computation*, but the review articles may prove to be an especially important service.

Network is published by the Institute of Physics in the United Kingdom. I hope this does not mean that that researchers at the neurobiological end of the field will tend to overlook it. With a bargain personal subscription rate, the journal will certainly not be beyond their reach.   □

John A. Hertz is in the Laboratory of Neuropsychology, National Institute of Mental Health, Bethesda, Maryland 20892, USA.

Beyond numeracy

Tony Barnard

Mathematics Review. Editors David Mond, Ian Stewart and David Tall. *Philip Allan. 4/vol. £16.50 (£7.95 for students at educational establishments with an institutional order).*
Quantum: The Student Magazine of Math and Science. Founding editors Yuri Ossipyan, Sheldon Lee Glashow and William P. Thurston; physics editor L. D. Kirkpatrick; mathematics editor M. E. Saul. *National Science Teachers Association / Springer. 6/yr. $28 (institutional), $18 (personal), $14 (student).*

THE mathematical diet of school pupils, both in content and presentation, is always influenced and constrained by national examinations, and pupils are sometimes not able to engage in as many exciting areas of mathematics or reflect on as many underlying central themes as might be desired. Complementary sources of mathematical nutrition are therefore warmly welcomed, and both *Mathematics Review* and *Quantum* are valuable morsels at the school–university interface.

Mathematics Review is aimed specifically at helping A-level and H-level mathematics students with their coursework and examination preparation in a broad mathematical context free of syllabus-type constraints. It is full of lively articles that both explain essential mathematical concepts and illustrate how they apply to everyday life, and is sprinkled with thoughts on heuristic and philosophical aspects. There is a good balance in the choice of material and it is well matched to the intended readership. Regular features include an examiner's eye view of examination questions and solutions, an imaginative problem section and a "Who's Who" of famous mathematicians of the past, not to men-