has benefited from a two-way interaction between studies in the laboratory and the discovery of complex interstellar molecules.

Most of the entries in *The Astronomy and Astrophysics Encyclopedia* could not have been written in 1940, and many of the others would have been totally different. Commissioning such an encyclopaedia is an ambitious undertaking, and Stephen Maran and his editorial advisory board and contributors must be congratulated on the successful manner in which they have carried out this task. Although it would be an exaggeration to say that the whole of present astronomical knowledge is contained in these densely packed pages, most active research fields are summarized and references are given to enable readers to get more deeply into a subject. Cross-referencing between articles is extensive; most of them were written in 1989 and 1990, with many brought up to date while in proof in 1991. The encyclopaedia thus presents a broad picture of present-day astronomical knowledge and research.

I have not read every word of the encyclopaedia, nor do I have the knowledge to confirm that all that I have read is sound. I am however happy that most of the articles are clearly written and provide a realistic and up-to-date view. Some currently unfashionable views are perhaps underrepresented and could have surely been mentioned without giving them strong support. I think, for example, of active galactic nuclei without black holes and of the capture theory of the origin of the Solar System.

Jacqueline Mitton's *A Concise Dictionary of Astronomy* should be extremely useful to anyone who wishes to find a short definition of a word or phrase relating to astronomy. She too has made use of extensive cross-referencing between entries, ensuring that no text has to be repeated. She has also wisely decided not to include any astronomers by name. It would have been an invidious task to decide who should be included and who should be left out, and one that would have lengthened the dictionary considerably. So astronomers appear only in conjunction with concepts named after them, such as Einstein ring, Eddington limit, Hertzsprung–Russell diagram, Hubble constant, Jeans mass and Oort cloud. I tested the range of contents of the dictionary by looking for entries that I would expect to find; only rarely was I disappointed, either by the absence of an entry or by an overstatement or inaccuracy. To show that I have read this highly recommended book, I will list just a few suggested entries for the second edition: asymptotic giant branch, giant branch, interstellar dust, Oort limit, pre-main-sequence star.

It is not easy to envisage what these two books will look like in 2040, but I am sorry that I shall not be around to see them or the transformation in understanding that will have occurred. □

R. J. Tayler is at the Astronomy Centre, University of Sussex, Falmer, Brighton BN1 9QH, UK.

An insider's view

David J. Stevenson

Deep Interior of the Earth. By J. A. Jacobs. *Chapman and Hall: 1991. Pp. 167. £24.95, $39.95.*

IT is no accident that Earth scientists devote so much attention to the parts of our planet that are nearby. The data are voluminous, the supporting experiments are easier and the issues are well-defined, pressing and still often unresolved. The deep interior, and especially the core, has usually been most attractive to those who like their science unencumbered by too many awkward facts or richness of detail. But this area of research is maturing and now offers much more substance to go along with the ever-present excitement of dealing with basic questions such as why the Earth has a large magnetic field. Four areas of endeavour are principal contributors to this flourishing activity: seismology, geomagnetism, mineral physics and fluid dynamical convection modelling. A particularly important development of recent years has been the growing acceptance and understanding of how the Earth's core and mantle interact chemically, thermally and dynamically. It is no longer appropriate to focus on one region without regard to the other.

Jack Jacobs' new book is a modest but successful summary of these areas of study. It is up to date, with many references as recent as 1991, and covers all the important subjects in a largely non-mathematical but substantive way. Jacobs' style has been honed in several books, including a much longer study of the Earth's core, and consists of reporting the science rather than developing a personalized synthesis. This has both advantages and disadvantages. The advantage is that the reader is presented with a usually thorough and unbiased summary of the state of affairs, something that is not guaranteed even in a thoughtful review paper where a writer is prone to emphasizing his or her own efforts. The disadvantage is that the reader cannot really judge the work because Jacobs frequently eschews judgement or even criticism in favour of straight reportage. My feeling is that a thoughtful, provocative synthesis can have a far greater and lasting impact on the field, but that a book such as this also serves an important role as a source of information.

Readers of Jacobs' earlier books should be assured that his latest is not merely an update but covers some new ground, including considerable discussion of the lowermost mantle and the nature of mantle convection. The most suitable readers, however, are not those already aware of Jacobs, but a much broader set of scientists, those who do not research the deep Earth but who wish to appreciate the current state of our understanding. For this, the book is extremely appropriate because it is clearly written, succinct and well illustrated (mainly by figures extracted from published papers). Although it is not suitable as a class textbook, it is an excellent supporting sourcebook and I have already used it in this way in a survey geophysics course. It even includes a short but thorough summary of ideas about the Earth's origin, which is most appropriate bearing in mind that the nature of the core is probably closely connected to how it formed. □

David J. Stevenson is in the Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, California 91125, USA.

New in paperback

■ Icon Books have recently relaunched four bestselling cartoon guides to contemporary issues: *Freud for Beginners* by R. Appignanesi and O. Zarate; *Ecology for Beginners* by S. Croall and W. Rankin; *Einstein for Beginners* by J. Schwartz and M. McGuinness; and *Darwin for Beginners* by J. Miller and B. van Loon (for a review see *Nature* **300**, 551; 1982). Each is priced £7.99.

■ *The Legacy of Chernobyl* by Zhores Medvedev is a full and accessible account of the disaster. Published by Norton, price $10.95. For a review see *Nature* **352**, 283; 1991.

■ In *Blinded by the Light: The Secret History of the Sun*, John Gribbin provides an engaging summary of the latest research on the Sun. Published by Black Swan, price £5.99. For a review see *Nature* **355**, 29; 1992.

■ Stephen Jay Gould's most recent collection of essays, *Bully for Brontosaurus*, is issued in paperback by Penguin, price £7.99. For a review see *Nature* **352**, 117; 1991.

■ John Barrow's *Theories of Everything: The Quest for Ultimate Explanation* is published in paperback by Vintage, price £6.99. For a review see *Nature* **350**, 325; 1991.

■ Cambridge University Press reissue next month the classic *A Mathematician's Apology* by G. H. Hardy, with a forward by C. P. Snow. Price £4.99, $7.95.

■ Andrew Hodges' biography of Alan Turing, *The Enigma*, is reissued by Vintage with a new preface. Price £8.99. For a review see *Nature* **307**, 663; 1984.