

book and thought about it. The reality is that this is an outstanding volume that should be on the bookshelf of every researcher or graduate student concerned with metamorphism in any of its guises.

B. W. D. YARDLEY

Taylor, S. R. *Solar System Evolution. A New Perspective. An Inquiry into the chemical composition, origin, and evolution of the solar system.* Cambridge (Cambridge University Press), 1992, 306 pp. Price £35.00

The distinguished geo/cosmochemist Ross Taylor follows up *Lunar Science: A Post Apollo View* (1975) and *Planetary Science: A Lunar Perspective* (1982) with a book that attempts 'to account for the existence of the planets, satellites, asteroids, and comets'. 'The book is biased toward the geochemical point of view . . .'. 'The subject is rendered very difficult by the wide variety of contrary opinions . . .'; 'Sometimes the data are suspect.' 'Grand theories are useless if they cannot explain the minute details', but 'the mere accumulation of the staggering amount of detailed observations in the solar system is of little use unless there is some unifying concept . . .' Rather than providing 'a detailed travelogue or Cook's Tour of the solar system', 'I have attempted a commentary on the problems of its origin and evolution.'

Chapters are: Planetary Formation: A Historical Perspective; The Solar Nebula; The Meteorite Evidence; The Role of Impacts; The Planets; Rings and Satellites; The New Solar System. After turning the pages and spot-checking sections of particular interest, I became impressed with the careful presentation of the geochemical data. The mineralogical, petrological and geophysical data are more sketchy.

In the last chapter on The New Solar System, Ross Taylor describes 'The End of Clockwork Solar Systems', and the 'Collapse of Grand Unified Theories'. In 'Our Present Understanding', he summarises how a fragment of a spiral arm from a galaxy condensed towards its centre; underwent erratic evaporation, condensation and melting; spread out into a rotating disc with dust moving to the centre; evolved into a sun which became a fiery orb and bodies ranging in size up to protoplanets. Ultimately the present planets were generated and finally blasted by most of the surviving planetesimals. This general scenario is deservedly accepted by solar system scientists, but readers may wish to consider being cautious in accepting some currently popular ideas. Thus the large impactor hypothesis for the origin of the

Moon/Earth system may be too simple. My prejudice is to favour a complex sequence of events with erratic growth of the Moon. Some of the chemical properties of the lunar rock fragments and minerals are perhaps more easily explained in this way. The plagioclase/basalt/etc. crust may constitute the accumulations from several magma oceans and remelted cumulates.

In the Epilogue, Ross Taylor philosophises on the place of *Homo sapiens* in the solar system, and focuses in the sequence of lucky chances required for man to reach the current capacity to reconstruct the history of the solar system. We are probably alone in the Universe. 'The (human) species still retains its highly aggressive instincts (JVS: I remember listening to certain geochemical debates in the 1970s!), once necessary for survival, but now potentially as much of a danger as the loss of flight was to prove to the Mauritian dodo.'

Readers should enjoy remarks on the following in the Notes and References: apocryphal elephant at Leningrad; the wisdom of acquiring a wife; a Napoleonic view of the asteroids; New Zealand shepherds.

Ross concludes with the provocative: 'One is comforted on this journey, by the steady convergence of scientific ideas toward some kind of consensus, as new facts are acquired. Science is in this way distinct from most other human activities, which display the opposite tendency of divergence with time, a process most clearly revealed by the multitude of religions and philosophical systems.' Can't wait for your next book Ross!

J. V. SMITH

Freith, S. J., Ofoegbu, C. O. and Onuoha, K. M. (eds.) *Natural Hazards in Western Central Africa.* Braunschweig/Wiesbaden (Vieweg and Sohn) 1992. vi + 174 pp. Price DM88.0.

Before the Lake Nyos gas release that killed some 1700 people in 1986, western central Africa was not considered an area of high risk from major natural disasters. However, based on the oral history of western Cameroon, spectacular 'misbehaviour' of lakes recurs in legends of the local tribes, suggesting that that type of phenomenon was well known in the past. With the rise in population around these lakes, it is clear that increasing attention should be paid to the hazards presented by the rapid expulsion of toxic gases from lakes.

Some two-thirds of the book are devoted to a discussion of the causes and results of the Lake Nyos disaster. Also discussed in shorter sections