tions. Exploiting these symmetries allows us to gain insights into as complex phenomena as nuclear forces. Studies that involve lattice methods have enriched our understanding of the subject. Scattering experiments have been, and will always be, a way in which one can probe the properties of matter. While it is known that there are no valence strange quarks in the proton, the question of the strange sea has always been a subject of great interest. In the article entitled 'Parity-violating electron scattering and the electric and magnetic strange form factors of the nucleon' by Armstrong and Mckeown, the status of these measurements at a variety of experiments is reviewed.

In general, while it is possible to think about the consequences of our understanding of the microscopic laws of nature and to test them in detail, it is also a truism that the same laws apply to celestial bodies. In the article entitled 'The nuclear equation of state and neutron star masses' by Lattimer, the author takes the reader through a grand tour of neutron stars and on improvements in the nuclear state of matter. Improvements have been spurred by detailed theoretical studies as well as by observational data on radii and masses of neutron stars.

While on the subject of celestial bodies, especially those where matter is subjected to extreme conditions due to the forces acting on the medium that constitutes the matter, one may ask where our knowledge of other celestial bodies meets significant challenges. The article entitled 'Explosion mechanisms of core-collapse supernovae' by Janka, reviews the status of supernova theory and recent advances in the role of many competing factors that constitute our understanding. While there has been progress, the author also warns that many issues are not settled yet. The role of neutrinos in supernova explosions has now been established as being of central importance. In particular, the detection of the neutrino burst from SN1987A signalled the birth of the subject of neutrino astrophysics, which has grown in popularity.

In the article entitled 'Supernova neutrino detection' Scholberg reviews the theory of supernova neutrino detection and also describes the various important experiments and the principles of these experiments. A new era of precision supernova neutrino detection is in the offing. How much do we know about neutrino properties? Suffice it to say that we need to know a lot more. In particular, to date we know only the mass difference between neutrinos that have arisen from solar neutrino and atmospheric neutrino data.

In the article entitled 'Neutrino masses from the top down', Langacker reviews the theory of neutrino masses and how we could try and think of these as arising from some larger, richer theory, such as even string theory or other competing extensions of the standard model of elementary particle interactions. In the article entitled 'Results from the Borexino solar neutrino experiment' by Calaprice *et al.*, measurements of solar neutrino fluxes associated with low-energy neutrinos at an experiment in Italy are reviewed. Interestingly, the experiment has also measured fluxes of geoneutrinos that are in accordance with the paradigm that the interior of the Earth is consistent with a bulk silicate composition.

Thus far, we have been occupied with matter at extreme conditions or high energies. However, even at low energies, at high precision one can probe the possibility of uncovering deviations from known laws of nature. One could also contend with the intrinsic quantum mechanical nature of phenomena. One of the most important benchmarks of this is the so-called Casimir effect due to the zero-point energy of vacuum. This leads to forces between uncharged metallic plates in vacuum. In the article entitled 'The Casimir force and related effects: The status of the finite temperature correction and limits on new long-range forces' Lamoreaux, the status of measurements as well as the finite temperature corrections are reviewed.

How about fundamental properties of elementary particles? In particular, something as simple to describe as the anomalous magnetic moment of the electron and its heavier counterpart the muon have been important laboratories to test the laws of nature. In the article entitled 'Electron spin and its history' by Commins, the reader is presented with a fascinating account of just that. A closely related article is the one entitled 'Muon (g-2): experiment and theory' by Miller *et al.*, which remains one of the important places where there is discrepancy between theory and experiment. In particular, the Brookhaven experiment that concluded some years ago, has provided one of the sharpest measurements of any basic property of an elementary particle, which is that of the anomalous magnetic moment of the muon.

Two stand-alone articles are made available to the reader in this outstanding collection: 'M-theory and maximally supersymmetric gauge theories' by Lambert, takes the reader through a tour of an emerging candidate for a theory of everything, while 'Backreaction in late-time cosmology' by Buchert and Rasanen, provides an introduction to an unconventional extension of cosmology.

In conclusion, this collection of 19 articles is outstanding, one, a great pleasure to read and an encyclopaedic reference as well as a treasurehouse for a bibliography on the subjects covered. A must for any library.

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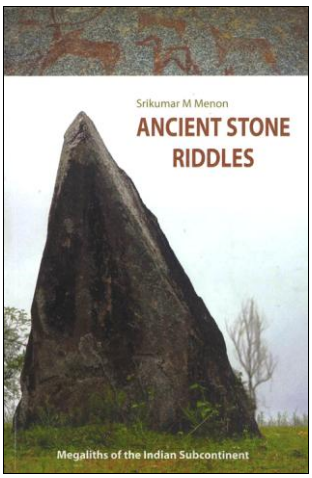
B. ANANTHANARAYAN

Centre for High Energy Physics,
Indian Institute of Science,
Bangalore 560 012, India
e-mail: anant@cts.iisc.ernet.in



Ancient Stone Riddles – Megaliths of the Indian Subcontinent. Srikumar M. Menon. Manipal University Press, Manipal Centre for European Studies, Manipal 576 104, 2012. x + 100 pp. Price: Rs 185.

This short book describes megaliths found at various sites in India, particularly in Karnataka and Kerala. Within its brief extent the book includes a discussion on the possible origin and meaning of these fascinating structures, their spread in the subcontinent, the culture of

the people who may have built the monuments, the vandalism that many of these sites are subjected to, the importance of preserving and studying the sites further and their unique role in informing us about the age of their creators, in the absence of any written records of those periods. The book is well produced, is interesting to read and easy to understand and is reasonably priced. It deserves wide circulation.

Megaliths, as the book describes, literally mean 'built of large stones'. But not all megalithic structures are vast in size like Stonehenge. They come in various sizes and configurations; some are associated with burial sites, while others are not. They could be in the form of circles of boulders on the ground, grids of stones numbering as many as a few thousand sometimes aligned in cardinal directions, single standing stones called menhirs (which this reviewer first read about in the Asterix stories), menhirs grouped in patterns, small chambers called dolmens and in many other forms.

There are over 3000 megalithic sites in India, with a large number located in the south, but sites are known in many other parts of the country as well. These megaliths are associated with the Iron Age, with many sites believed to have been built between 1500 BC and AD 200, but the construction could have started earlier. European megaliths are believed to be much older, the earliest having been erected in the Neolithic or late Stone Age (c. 4000 BC to 1500 BC). While there are differences in type between megaliths in different regions, there are many similarities too even amongst sites which are far from each other and which were built centuries apart. The knowledge therefore could have been transferred in some manner across the great divides over space and time, or similar patterns could have emerged independently as different groups of builders passed through various stages of development. Erecting the megaliths would have involved considerable skills, effort, time and cost and the structures should therefore had great symbolic value and perhaps even some practical importance. Properly aligned structures would provide identification of the equinoxes and solstices, and the cycles of the Moon.

All these matters and more are described concisely and yet lucidly in the book. The first four chapters provide an introduction to megaliths in general and Indian megaliths in particular, and a discussion on who the megalith builders could have been and their life as gathered from artifacts found at the sites and cave and rock paintings near the sites. Chapter 5 presents a detailed description of important megalithic sites in Karnataka and Chapter 6 has a discussion of megalithic architecture. The next two chapters have various speculations and a discussion of possible astronomical significance of some of the megaliths. The book ends with some unanswered questions and, most importantly, a discussion of the blatant way in which many of the sites are being destroyed.

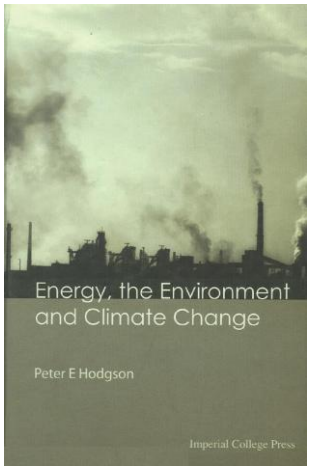
The book has many beautiful images of megalithic sites (taken mostly by the author). At the end there is a brief bibliography, a list of latitude and longitude of sites discussed in the book, and a map with known megalithic sites marked by Robert Brubaker. What is missing is a glossary of terms and a list of dates pertaining to various eras mentioned in the book; these would have been useful for the non-expert reader the book is directed at.

The author of this book, Srikumar Menon, is a person of many interests. Trained as an architect, he has a passion for astronomy and has spent time in astronomy institutes working on various projects. He has great interest in archeology of the Indian subcontinent. He now teaches at Manipal University and has research fellowships and projects for studying megalithic sites.

This interesting little book shows how important it is to document megalithic sites and to preserve knowledge about them for posterity. It should be possible to use modern technology to make detailed images and maps, and to record coordinates of all components of at least the most important sites. These would be fine projects for students working in a variety of fields, guided by people like the author who have a broad background and great interest. Information about the sites would then be available for analysis in the future, even when many of the sites are lost to human and natural depredation.

AJIT KEMBHAVI

Inter-University Centre for Astronomy and Astrophysics,
Post Bag 4, Ganeshkhind,
Pune 411 007, India
e-mail: akk@iucaa.ernet.in



Energy, the Environment and Climate Change. Peter E. Hodgson. Imperial College Press, 57 Shelton Street, Covent Garden, London WC2H 9HE, UK. 2010. xxi + 202 pp. Price: US$ 105.00.

Peter E. Hodgson, the author of this book, passed away on 8 December 2008 at a ripe age of 80. It rarely happens that one gets to write a book review much after the author's demise. Unlike many fellow scientists, Hodgson was active till the very end. Barely two months before his demise, he was designing new courses for university students and was also simultaneously working on two books. The first being this book and the other being one on Galelio.

Hodgson specialized in nuclear physics and was a lecturer at Oxford. His association with nuclear research goes back to 1950s. Appropriately so, this book is not as much about energy, or environment or climate change (notwithstanding the title), as much about nuclear energy. Nuclear energy remains the central theme of the book from the very onset to the end; discussions of everything else, including other energy options, environmental concerns and climate change are just supportive and peripheral to its seamless narrative. The author especially seems concerned about the nuclear naysayers. The editorial review fittingly summarizes it, '... the book contains many interesting facts, thoughts, and counterarguments to nuclear naysayers'.

One of the most notable features of this book is its lucid, easy and popular writing style. It is less intended for the specialists but more for a generalist audience. It has succeeded immensely in presenting a complicated subject in an interesting story format. However, the