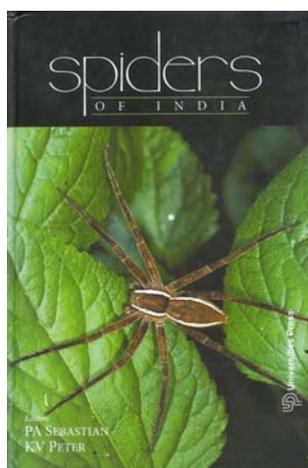


## BOOK REVIEWS

your fellow human beings, and if you went through that door, a strange thing happened: you left your petty troubles on the threshold. It could be addictive'. While *Cutting for Stone* will indisputably be enjoyed by all readers, those in the healing profession will derive much more pleasure out of it as they will be able to identify with many of the incidents and characters in the book.

SANJAY A. PAI

Columbia Asia Referral Hospital,  
Malleswaram,  
Bangalore 560 055, India  
e-mail: sanjayapai@gmail.com



**Spiders of India.** P. A. Sebastian and K. V. Peter (eds). Universities Press, Hyderabad 500 029, India. 2009. xxiv + 614 pp. Price: Rs 135.

After the diminutive book on Indian spiders by K. Vijayalakshmi and Preston Ahimaz, published in 1993, which served essentially as a tantalizing appetizer, this massive tome edited by Sebastian and Peter is a welcome main course. This is a delightful work and clearly a labour of love, because the interest and dedication of the contributors comes through on every page. This is particularly important in this high-tech age when the science of conventional systematics is being eroded and when systematists, like the authors, are themselves an endangered species. The clear line drawings, the excellent colour plates of photographs of representative species (albeit largely from southern India), a detailed glossary,

a bibliography, an updated checklist of spider species in India and the easy-to-follow keys all make for a valuable and user-friendly book. What I liked particularly about the book was its introductory chapters which give plenty of information to suit the appetites of both the amateur as well as the serious professional. However, there were some important issues that the authors may want to consider in their next edition. In the section on spider communication, while the authors mention that spiders can communicate by visual, chemical and tactile methods, they only deal with stridulatory communication in any detail and say nothing further about visual and chemical modalities. Many groups of spiders are extremely visual in their hunting and feeding strategies<sup>1</sup> and are also known, for example, to even use ultraviolet fluorescent markings in mating displays<sup>2</sup>. Furthermore, many male spiders track females by the scent of their silk which is an important component of species recognition<sup>3</sup>. In the section on Natural History and Bioecology, by M. J. Mathew *et al.*, it was not clear what 'bioecology' referred to that is different from 'ecology'. This was confusing. In the section on the Ecological Role of Spiders, it was surprising that not much emphasis was given to the role of spiders in agriculture as potential pest control agents<sup>4</sup>. Many studies are now demonstrating that ecosystems with habitats suitable for spiders can be important in integrated pest management and can help to reduce the use of pesticides.

Another aspect that the authors may want to consider in a future edition is adding phylogenetic trees of what is known about the relationships of spiders with other invertebrate groups and of the spider groups themselves. These trees could be those generated using morphological characters or those combining



*Nephila kuhlii* (female).

morphological and molecular data. While phylogenetic trees generated using nuclear and mitochondrial genes are fast becoming the norm, it is an undeniable fact that the 'molecular' taxonomists are often handicapped by their lack of knowledge of basic morphological taxonomy and basic natural history. This is admitted in weak moments (and often *sotto voce*) by the molecular taxonomists while they furiously wave the banner of DNA bar-coding and other molecular approaches. Thus, molecular taxonomists and morphological taxonomists must necessarily work together to produce better trees of life. In this regard, it is interesting that several spider taxa have been found to be extremely amenable to DNA bar-coding and the recorded molecular variation has been found to relate well with knowledge of species boundaries obtained from natural history and morphological taxonomy<sup>5</sup>; however, in more speciose groups, a combination of morphological and molecular data was needed to correctly resolve inter-taxon relationships<sup>6</sup>. It is clear that the fields of morphological and molecular taxonomy must form healthy anastomoses, and what better taxon to take this approach forward than spiders in India, especially with this timely book on spider taxonomy using morphological characters. It would, therefore, also be useful for the authors to mention, in their next edition, that in order to collect spiders for DNA-based taxonomy, it is necessary to preserve them in 90% ethanol, while they have already mentioned that for spider preservation for morphological identification, 70% ethanol is the method of choice.

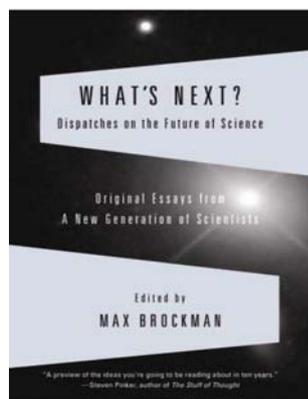
In summary, I would strongly recommend this book from one of the few remaining bastions of traditional spider taxonomy in India, particularly in Kerala, and look forward in the years to come to many useful collaborations between morphology, molecules and men.

1. Bhaskara, R. M., Brijesh, C. M., Ahmed, S. and Borges, R. M., *J. Comp. Physiol. A*, 2009, **195**, 409–417.
2. Lim, M. L. M., Land, M. F. and Li, D., *Science*, 2007, **315**, 481.
3. Borges, R. M., Ahmed, S. and Prabhu, V., *J. Insect Behav.*, 2007, **20**, 389–402.
4. Chatterjee, S., Isaia, M. and Venturino, E., *J. Theor. Biol.*, 2009, **258**, 352–362.
5. Barrett, R. D. H. and Hebert, P. D. N., *Can. J. Zool.*, 2005, **83**, 481–491.

6. Robinson, E. A., Blagoev, G., Hebert, P. D. N. and Adamowicz, S. J., *ZooKeys*, 2009; dx.doi.org/10.3897/zookeys.16.239

RENEE M. BORGES

*Centre for Ecological Sciences,  
Indian Institute of Science,  
Bangalore 560 012, India  
e-mail: renee@ces.iisc.ernet.in*



**What's Next? Dispatches on the Future of Science.** Max Brockman (ed.). Vintage Books, New York. 2009. xv + 237 pp. Price: US\$ 15.

*What's Next?* is a collection of essays edited by Max Brockman, a literary agent. An interesting aspect of the book is the brief description of each author preceding their respective essays. The 18 essays are drawn from various fields such as physics, neuroscience and evolutionary biology, composed by a genre of

researchers who have not previously written for non-academic readers, as mentioned in the preface. Although most of the essays revolve around neuroscience, I believe these would be equally interesting for readers from a varied background. However, the two essays on cosmology – ‘Our Place in an Unnatural Universe’ by Sean Carroll and ‘Just What is Dark Energy?’ by Stephon H. S. Alexander – demand a basic understanding of concepts in physics.

The essays also provide a set of analogies keeping the interest of readers from waning. All the essays are worthwhile and the one on climate change by Laurence C. Smith explores the possibility of population redistribution pattern with reference to the Northern Rim (comprising North America, Canada, Denmark, Iceland, Sweden, Norway, Finland and Russia) due to effects of climate change and availability of economic opportunities. He also highlights the effects of climate change and gives the picture of how ‘climate change’ phenomenon has been accepted as a reality by people at large. The essays pertaining to neurosciences discuss how the brain ascribes humans an advantage over other species; ‘synaptic pruning’ (elimination of connections in the brain) during development; ‘mirror neurons’ that respond when we watch someone’s actions and yet do not make us imitate them, enabling exchange of experiences with the people around, and so on. In ‘How Does Our Language Shape the Way We Think?’, Lera Boroditsky eloquently describes the effect of one’s language on behaviour, by providing examples from

English speaking, German speaking and Russian speaking groups given the same set of experiments to perform. Vanessa Woods (an award-winning journalist) and Brian Hare (an anthropologist) suggest a ‘theory of mind’ that makes humans distinct from chimpanzees and allows for social behaviours such as human curiosity about what others are thinking.

Nathan Wolfe in ‘The Aliens Among Us’ questions whether a virus is a friend or foe of mankind. He brings to light the ecological significance of viruses. For instance, he mentions that ‘20–40% of bacteria in marine systems are killed by viruses each day’ returning organic matter for recycling, thus sustaining the nutrient cycle. They also generate genetic variation. The last essay, ‘Why Hasn’t Specialization Led to the Balkanization of Science?’ by Gavin Schmidt is a treat as it underlines how fragmentation into sub-fields hampers communication of important research findings. Not only this, it also draws attention to the kinds of papers that get noticed and to accessibility of data.

The book is a pleasure to peruse and I would recommend it not only to early researchers, but also to undergraduates and laymen who must be made aware of the new areas of research in natural and social sciences.

RICHA MALHOTRA

*(S. Ramaseshan Fellow),  
H. No. 10, Jaladarshini Layout,  
Off New BEL Road, Mathikere,  
Bangalore 560 054, India  
e-mail: rchmalhotra@gmail.com*