



Mars flood channels. Geologic evidence suggests that the floods occurred during the first billion year of Mars's history.

speculative. Telescopic observations and later planetary missions have provided us a wealth of information, often leading to concepts contrary to the speculative era.

The book under review is a welcome addition in this respect. It has 11 chapters. After a general introduction on planetary climates, specific chapters on Venus (2), Mars (2), satellites (1), Jupiter (2), Saturn (1), Uranus, Neptune and exoplanets (1) and conclusions (1) are presented. Particularly, the chapters on Venus and Mars, providing a comparison/contrast with Earth are informative, even for an expert. In addition, a glossary to explain scientific terms and a list of important references are included at the end. The book is well written for both a scientist and a lay man, with minimum jargon and simple explanations. The author's teaching experience can be clearly seen in the writing style.

All mathematical expressions and scientific concepts are explained in 'Boxes', immediately after their first appearance in the text.

I found it strange that planet Earth does not figure as a separate chapter in this book. Though at appropriate places in several chapters, a comparison/contrast is made to Earth, a separate chapter dealing with present and palaeoclimate on Earth and the anthropogenic effects would have been more valuable for a general reader. Notwithstanding this aspect, the book would be a good resource in the libraries, as well as for science enthusiasts.

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PERSONAL NEWS

T. C. Narendran (1944–2013)

The life of T. C. Narendran was so intense and productive that it deserves the applause and admiration of all who knew him – colleagues, friends, students of chalcids and his relatives. I feel proud to be a part of his legacy in revealing his dedication to his work, and his readiness and interest in tutoring those keen to learn about chalcids.

Thekke Curupathe Narendran was born on 24 February 1944 in Trichur, Kerala. As the son of an agricultural scientist, Ramanuja Menon, he completed his high-school education in Trichur. In 1965, he earned his Bachelor's in Zoology from the Kerala University and completed his Master's in 1967 from St John's College, Agra University, Uttar Pradesh. After a brief spell as lecturer in the Department of Zoology at St Aloysius College, Trichur, Narendran joined the Calicut University as a research officer (1969–72) and then was employed by the Insect Identification and Foreign Parasite Introduction Section of the US Department of Agriculture (USDA) to study the biology and systematics of Oriental *Brachymeria*. He later continued

his research on parasitic wasps and obtained his doctorate from Calicut University in 1975 based on his studies on biology, morphology and host–parasite relationships of *Brachymeria lasus* (Walker), under the direction of K. J. Joseph. In 1975, Narendran became a lecturer at the University of Calicut,



where he continued his systematic research on parasitic wasps and taught insect diversity, insect morphology, systematic entomology and principles of taxonomy.

During his M Sc days at Agra, Narendran initiated research on reproductive biochemistry. However, his passion for insect classification and evolution grew under the influence of the renowned Indian entomologist M. S. Mani, who was then at Agra University. Following his doctoral research on the biology of *B. lasus*, Narendran continued his correspondence with experts in parasitic wasps, especially Z. Bouček (CAB International, London), who is considered the father of modern chalcidology. Narendran's persistent queries on oriental chalcids flooded Bouček's letter board until he joined him as a postdoctoral fellow in 1980 at the British Natural History Museum, London. During his stay in London, Narendran procured references and information about the oriental chalcids and collaborated in two publications on the chalcid genera *Dirhimus* (Chalcididae) and *Leucospis* (Leucospidae) from India.

After his return from London, the USDA granted Narendran a PL 480 project (1984–1987) for his research on the biosystematics of Chalcidoidea. Later, he received financial assistance from the Department of Science and Technology (DST), New Delhi to study the systematics of Eurytomidae and Torymidae (1986–1990), during which period he visited the US National Museum of Natural History and worked in collaboration with the world-renowned eurytomid expert Eric E. Grissell. His research on the taxonomy of parasitic hymenopterans continued and the Ministry of Environment and Forests (MoEF), New Delhi, funded a project on Eulophidae (2003–2005) in his final years of service as the professor and head of the Department of Zoology at the University of Calicut. Even after retirement in 2004, Narendran continued to work in the same laboratory and collaborated with M. Nasser on the biology and taxonomy of chalcidoids of the rice ecosystem and biosystematics of Eupelmidae of the southern Western Ghats (2006–2009). In 2005, DST awarded him an Emeritus Professorship for his research on Tetrastichinae and then an USERS grant in 2008 for taxonomic studies of Eulophinae. In 2008 the Harvard University also awarded him the Ernst Mayr Grant to continue his work at the Natural History Museum, London.

Narendran published over 394 articles in Indian and international journals and 10 books, including 7 monographs, mostly describing the chalcids of the Indo-Malayan and Middle East region, and often in collaboration with others. In addition to one new tribe, he proposed a total of 1091 species names and 55 generic names. His main contributions to chalcidology include taxonomic revisions of Oriental Chalcididae, Leucospidae, Torymidae, Ormyridae, Eurytomidae, Eulophidae, Eucharitidae, Pteromalidae, Perilampidae, Tetracampidae and Eupel-

midae. Apart from chalcids, he advised his students in their taxonomic investigations on Braconidae, Ichneumonidae, Formicidae, Platygasteridae, Proctotrupidae, Diapriidae, Stephanidae, Scelionidae, Mymaridae, Bethyloidea, Sphecidae, Vespidae and Apidae.

Narendran collaborated with experts around the world, but the most fruitful of them was with Mohammad Hayat, Aligarh Muslim University (with whom he had a deep mutual understanding and exchanged materials of chalcid families of interest) and with John S. Noyes, Natural History Museum, London. He collaborated with Damir Kovac (Germany) on *Tetramesa* Walker (Eurytomidae), Kees van Achterberg (National Museum of Natural History, Leiden) on Vietnamese and Borneo specimens of Chalcididae and Eulophidae, Antonius van Harten on Middle East chalcids and Lotfalizadeh on *Eurytoma* parasitic on *Eulecanium rugulosus* in Iran.

Despite formal retirement, Narendran continued to work at Calicut and guide his students in taxonomy until 2012. He was elected a Fellow of the Royal Entomological Society of London in 1980, the Indian Academy of Sciences, Bangalore in 2000 and was a founder fellow of the Indian Academy of Entomology since 1999. He also received many other awards and honours, including the highest honour of the MoEF, New Delhi, the E. K. Janaki Ammal National Award in 2004, in recognition of his outstanding contribution to systematic entomology, and the Government of Kerala's *Swadeshi Shastrapuraskaram* (2008). In 1998 the USDA, Washington, awarded him an 'Appreciation Certificate' for his accomplishments in research on Chalcididae. The National Biodiversity Authority, Gol selected Narendran as a member of the Expert Committee on Collaborative Research (2005) and he was a member of the Research Monitoring Committee of

the Centre for Ecological Sciences, Indian Institute of Science, Bangalore. He was also a member of UGC's National Accreditation Committee and the Research Coordination Committee of the Central Silk Board (New Delhi). He was Chairman of Programme Advisory Committee of the Zoological Survey of India and Vice-President of the Ethological Society of India, Bangalore.

In 2004, Narendran founded a Trust in his name for animal taxonomy to help small-scale funding for taxonomic research, organizing short-term entomology courses, offering insect identification consultancy services and acknowledging young taxonomists in India. He was prompt in providing identification assistance to researchers of various organizations and institutes who work on research aspects involving parasitic wasps. He was the only source of taxonomic expertise in many chalcid families for at least the biocontrol laboratories of agricultural institutions in India. He was the Chief Editor of the journal *Biosystematica* and served on the editorial board of *Oriental Insects*, *Journal of Bombay Natural History Society* and *Entomon*. He guided 26 students for their Ph D and developed a School of Entomology with taxonomic expertise in various families of Hymenoptera. I consider it my great privilege to have been a Ph D student under his supervision and to have worked with him subsequently for 10 years. He was enthusiastic to spend his time in front of his microscope studying chalcids. Narendran died on 31 December 2013 from a heart failure. He is survived by his wife (Mangalabhai) and two sons (Rajeev Menon and Ranjit Menon).

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