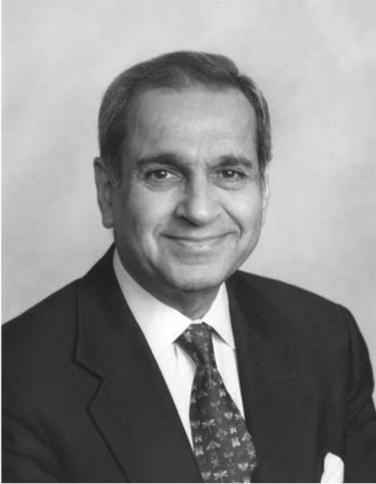


## Krishna Kumar (1928–2014)



Krishna Kumar, an internationally acclaimed entomologist specializing in termites, passed away on 19 September 2014, at the age 86 at his residence in Manhattan, USA after ailing with multiple organ cancer for over a decade. His demise has left behind a vacuum in the field of termite taxonomy. Here we would like to pen down a few aspects of his personal and professional life that reflect his scientific skill and spirit.

Born on 12 June 1928 in Rangoon, Burma (now Yangon in Myanmar), then a part of British India, where his father, a Major in the Indian Army was commissioned during World War I, Kumar spent much of his childhood in Dehradun. In 1950, he earned a Bachelor of Science degree from Agra University and subsequently a Master's degree from Lucknow University in 1952. Soon after his post-graduation, he joined the Forest Research Institute (FRI) in Dehradun, as a Research Assistant to M. L. Roonwal, who was then doing research on termites. Working with Roonwal, Kumar too developed a keen interest in the order Isoptera. While working at the University of Minnesota as a Research Assistant, he got an opportunity to join Alfred E. Emerson, an eminent scientist at University of Chicago, working on termite systematics and earned his doctorate degree in evolutionary biology in 1961. Immensely influenced by his mentor, Kumar took up the comprehensive revision of the world's genera of dry-wood termites, which even today remains an important reference material for Kalotermitidae<sup>1</sup>. After his doctoral studies, Kumar worked

as a National Science Foundation Post-doctoral Fellow in the University of Chicago for a year, before he moved to New York to work as instructor at the City College, New York (CCNY). Kumar met his wife Valarie, a student of English literature and an editor with the Chicago University Press, while pursuing his Ph D and they were married in 1960 before moving to New York.

Apart from being an instructor at CCNY, Kumar also served as a resident Research Associate at the Department of Entomology, American Museum of Natural History (AMNH). He retired in 1996 as a Professor at CCNY, but remained associated as Professor Emeritus and continued his comprehensive research on termites with the AMNH. His comprehensive and in-depth knowledge on termites, particularly their systematics, taxonomy, morphology, biogeography and fossil records is unparalleled. Kumar has described 19 new genera and 106 new species of termites, exemplifying his contribution to entomological research.

In addition to productive research, Kumar held several key administrative positions. He served as the Chair of the Department of Biology, City College, New York (CCNY) of City University of New York (CUNY) (1963–1968), Deputy Chair of the Department of Biology (1972–1975, 1978–1981), Chair of the

Graduate Program in Biology (1972–1974, 1978–1981), member of the Faculty Research Award Program (1978–1981, 1985–1993), and member of the University Committee on Research, CUNY (1981–1983, 1994–1996). He was also a member of the Linnaean Society of London and the Oriental Club, London.

Despite strenuous administrative and teaching responsibilities, Kumar along with Frances M. Weesner organized and authored the seminal, two-volume work entitled, *Biology of the Termites*<sup>2,3</sup>, synthesizing major topics on termite biology and systematics. Interestingly, the publication of this book coincided with E. O. Wilson's book, *The Insect Societies*<sup>4</sup>. Although today there are more recent works published on termites<sup>5,6</sup>, the two volumes by Kumar and Weesner still remain as invaluable reference.

For 42 years, Kumar served as a resident Research Associate at the AMNH and greatly expanded its termite collection, adding many more species collected from the forests of Sri Lanka, South India, Malaysia and Indonesia. Post-retirement, Kumar's research focused on termites fossilized in amber and he spent hours each day with his microscope, examining, sorting, comparing and measuring specimens and describing dozens of species during his work on *Termitidae in Miocene Dominican Amber*<sup>7</sup>. Kumar's



Krishna couple: Valerie & Kumar (with two other colleagues, rightside) at the XII International Congress of Entomology (London, 1964).

major achievement, post-retirement, was his magnum opus on the world's termites. In addition to being the most comprehensive compilation on any group of social insects, this 2704-page book, *Treatise on the Isoptera of the World*<sup>8</sup> published in 2013 is one of the largest projects ever accomplished in the 144-year history of the AMNH.

An editorial by Engel and Grimaldi<sup>7</sup> in *Zookeys* in appreciation of Kumar quotes, 'Emerson would have been immensely pleased to see how much more we now know about termite diversity, relationships, and evolution, largely as a result of Kumar's efforts. Kumar's encyclopaedic knowledge makes him the ideal person to have been the principal author of the upcoming and highly anticipated magnum opus, *Treatise on the Isoptera of the World* (2013). The work is monumental – a taxonomic compendium of the 3138 living and fossil termite species of the world – incorporating

a plethora of nomenclatural corrections made along the way, all based on direct study of over 4000 original taxonomic references and the more significant biological ones.'

Throughout his long and eventful career, Kumar was admired for his innovative ideas and unconventional style of working by both his students and colleagues. Known as a jovial and enthusiastic person, his dedication and hard work have encouraged and inspired many.

- 
1. Krishna, K., *Bull. Am. Mus. Nat. Hist.*, 1961, **122**(4), 303–408.
  2. Krishna, K. and Weesner, F. M., *Biology of Termites [Vol. I]*, Academic Press, New York, 1969, pp. xiii + 598.
  3. Krishna, K. and Weesner, F. M., *Biology of Termites [Vol. II]*, Academic Press, New York, 1970, pp. xiv + 643.
  4. Wilson, E. O., *The Insect Societies*, Harvard University Press, Cambridge, MA, 1971, pp. x + 548.

5. Abe, T., Bignell, D. E., and Higashi, M., *Termites: Evolution, Sociality, Symbioses, Ecology*, Kluwer, Dordrecht, 2000, pp. xxii + 466.
6. Bignell, D. E., Roisin, Y. and Lo, N., *Biology of Termites: A Modern Synthesis*, Springer Verlag, Berlin, 2010, pp. xiv + 576.
7. Engel, M. S. and Grimaldi, D. S., *ZooKeys*, 2011, **148**, 1–13.
8. Krishna, K., David, G. A., Krishna, V. and Engel, M. S., *Treatise on the Isoptera of the World*, Bulletin of the American Museum of Natural History, New York, 2013, vol. 377, p. 2704.

---

G. K. MAHAPATRO\*  
KOLLA SREEDEVI  
SACHIN KUMAR

*ICAR-Indian Agricultural Research  
Institute,  
New Delhi 110 012, India  
\*e-mail: gagan\_gk@rediffmail.com*

---