
Foreword

It was sometime in mid-2012 that I received an invitation to deliver an inaugural key note for the International Conference on Insect Science (ICIS-2013) in Bengaluru, India. Despite preoccupations, it was impelling to attend ICIS-2013 because India is the centre of origin for the shoot and fruit borer, *Conogethes punctiferalis* that obsessed me scientifically for nearly three decades. Secondly, it marked 25 years of fruitful collaboration between Japan and India on *Conogethes*. Further, a global discussion was planned in ICIS-2013 on the crambid moth—*Conogethes*—that is undergoing speciation and is expanding geographically and also in its host range.

The material presented in this book deals with insect science and pest management that are intimately related. Practicable pest management programmes cannot be strategized without sound insect science. There were lively discussions on a wide variety of aspects of insect science and pest management involving a majority of species from the oriental region. However, all presentations have not found a place in this book. Of course, space is a limitation! Hot issues in Entomology like resistance management, food security, phytosanitary measures, pest risk analysis, molecular entomology, toxicology, management, biodiversity, biosystematics, conservation, climate change, ecology and behaviour have all been included.

Entomologists like in other spheres of research have become specialised and sophisticated. But an increasing extent of effort is required for extension services, social and environmental issues to implement pest management especially in developing and tropical countries. This is a challenging and daunting task given the stratified standards of living, trade barriers and societal concerns. Natural recourses and people's participation also need to be interjected and harnessed for implementing pest management strategies successfully as these are critically important. Equally important is organising conferences as ICIS-2013! Such formative scientific conferences provide a forum for expressing and developing important new ideas across a wide range of related disciplines. I look forward to more such conferences and books by well-organised teams of entomologists.

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Preface

Great advances have been made during the last few decades in insect science and pest management. Undoubtedly, important factors contributing to the progress, firstly, have been the effective use of several sophisticated yet sensitive instruments like the GC/MS, gel electrophoresis, quantitative proteomics methods etc. More importantly, the present-day youth have not only increasingly become interested in insects and insect-related biological organisms but are also trying to understand them, their lives, and interactions, with multidisciplinary approach. Secondly, global trade and globalisation have led to rapid dissemination of information. As a result, new views, perspectives and interrelated sciences are evolving and emerging. Nowadays, the food growers and consumers have become more aware of the risks of pesticide residues in food, affecting market and trade. It is with this background that the Department of Entomology, UAS, Bengaluru and the Indian Society for Advancement of Insect Science, Ludhiana, Punjab conducted the International Conference on Insect Science (ICIS-2013) at Bengaluru, 14–17 February, 2013. ICIS-2013 was a mega, unique event drawing over 500 entomologists from 36 countries to a theme: New horizons in Insect Science with reference to molecular, climate change and pest management.

Papers on a number of relatively biodegradable, new molecules with a narrow spectrum of activity like anthrelinic diamide class of insecticides, cyazypyr and entomotoxic proteins namely lectins for the production of insect resistant transgenic crops were presented. These and other compounds have set new standards of efficacy and utility in plant protection. Some of these compounds represent landmarks for pest management for the present and the future. Presentations also focussed on pheromone trap with auto-confusing techniques, molecular-based genomic studies of pests, DNA barcoding of pests, pathogens, natural enemies and pollinators to ensure accurate identification, RNAi, impact of farming practices, pesticides and landscape management of wildlife in cultivated and wild habitats, identifying, conserving and declaring bee-rich areas as heritage sites, creating and marketing sustainable food goods that are safe, affordable and socially acceptable. A majority of the presentations were from developing countries focusing on pests that constrain generally small scale, sustainable, tropical agricultural production systems. The presentations reflected incredibly diverse aspects of insect science and pest management, and such coherent and up-to-date col-

lection of views are often not available to readers. Manuscripts were received in two forms: original research material and research work with reviewed material. It is hoped that this book will be of value and use to insect-scientists, pest managers and students alike, worldwide.

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