mention that there are scores of human genes that have been shown to be associated with particular viral infections. The relationship between human genome and microbiome is a thrust area of current biomedical research. Goodrich *et al*. review the host loci that have been found to be associated with microbial diversity. They suggest microbiome as a complex trait, and emphasize its inclusion along with genetics and environment for proper understanding of a disease. The itch sensation was once thought to be transmitted by neurons responsible for pain sensation. Meixiong and Dong review how recent studies have revealed itch to be transmitted by dedicated neurons via mass-related G-protein coupled receptors. *Drosophila* is an ideal system for understanding the nervous system. Perry *et al*. review our current understanding of *Drosophila* vision. They describe the anatomy of its visual system, its physiology as well as the molecular mechanism of vision.

Yeast is one of the favourite systems of geneticists. Two of the reviews in this volume deal with advances in genetics made using this model system. Ken-ichi Noma emphasizes the hierarchical order in which the three-dimensional genome of yeast is organized. The importance of cohesins and condensins in the entire process is highlighted. Towards the other end, Cavanaugh and Jaspersen discuss the inter-relationship among centrosomes, spindle pole bodies and nuclear envelope taking knowledge primarily from yeasts, but comparing it with humans. They provide a detailed description of the processes, and emphasize how several components in these different processes are the same.

Many poripherans and amphibians can regenerate themselves. Understanding the genetic mechanism of regeneration can undoubtedly advance medicine. Chen and Poss discuss how work with the zebra fish and salamander involving molecular genetics, modern imaging technologies and a quantitative approach has advanced our understanding of regeneration genetics. The current paradigm entails not to look at individual genes in isolation, but treat them as part of a bigger network. Martinez-Pastor *et al*. taking the Archaea as their system, review our current knowledge about gene regulatory networks. They discuss the resilience of such networks to environmental perturbations as well as how current knowledge allows us to predict changes to the network corresponding to particular perturbations. Christine Mayr discusses the 3′-untranslated (3′-UTR) regions of messenger RNAs (mRNAs). The longer 3′-UTRs in humans compared to yeasts not only can act as regulatory RNAs or small RNAs, but also as operons. The players in these processes are also discussed. Non-coding RNAs are also the topic of the review by Leonie Ringrose. She discusses the role of these RNAs in Polycomb and Trithorax epigenetic gene regulatory systems, and reviews the current theoretical literature.

Three of the reviews in this volume deal with plants. Ruonala *et al*. emphasize the importance of coordinated gene expression in different parts of a plant in the development of vascular system. They detail the major players in the process and the gene networks responsible for the differentiation of different cell types in this system. Wheat is a classic example. Uauy *et al.* discuss how a combination of induced mutations and high throughput genome sequencing is helping geneticists understand genetic variation in polyploid wheat.

For most of us who work on a very small aspect of genetic research, the diversity of topics is bewildering to say the least. At the same time as geneticists and scientists, we must acknowledge the responsibility for the implications of our research. We must be wary to present our work with adequate caveats and not overplay the inferences. Unfortunately, the present scientific culture, where the 'sellability' of research is paramount, caution would just bring one 'defeat'.

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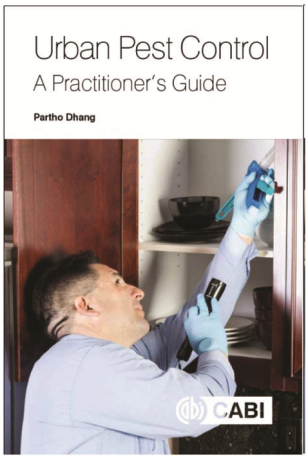

Urban Pest Control: A Practitioner's Guide. Partho Dhang. CAB International, CABI, Nosworthy Way, Wallingford, Oxfordshire OX10 8DE, UK. 2018. 138 pp. Price: Rs 2100; US$ 32.99. ISBN: 9781786395146

This book provides the opportunity for an alternative career option for entomology graduates from agriculture to household pests. Indian universities have been producing countless agriculture graduates with entomology as a major or an ancillary subject. Most of them look for opportunities to work in fields related to agriculture or chemical industry. This book opens up avenues to take the subject of entomology as an entrepreneurial venture, similar to what its author has done.

The book is the first of its kind in this subject with quality colour photographs, illustrations and easy-to-compare tabulated information for quick reference. This is a strength of the book in addition to a large amount of handy information, written following a non-technical script. The book is a useful self-learning tool for start-ups as well as for training fellow practitioners. It contains simplified pest identification keys, a vital tool for field technicians to use on their job. In addition to its core contents covering common urban pests, the book also includes a fair number of related topics in pest control such as methodologies used, latest formulation in use, information on pesticide handling and tips on rational marketing. Overall, it serves as a complete guide to existing practitioners.

The book opens with a valuable first chapter titled 'Understanding the business of controlling pests'. This chapter sends out the most important message

that it is important to know that pests are primarily attracted to structures by human activities, such as their behaviour and habits. Consequently, it is emphasized that pest control can be achieved by modifying human behaviour, changing human habits and improving or altering human living conditions. Secondary intervention methods termed 'pest control', such as use of chemicals should be considered only when there is a failure to achieve the necessary lifestyle changes.

This chapter is followed by eight more chapters, devoted to individual pests, their biology, behaviour and control methods. The pests covered include cockroach, mosquito, fly, bed bugs, termites, wood-infesting pests, stored-product pests, a number of sporadic pests and vertebrate pests. The emphasis throughout has been on the use of novel technologies, such as insect baiting for controlling pests under household conditions.

The next two chapters are devoted to various methodologies involved in pest control. They cover conventional methods as well as emerging baiting methods. Various types of formulations and their advantages and disadvantages are presented for the easy understanding of practitioners. The twelfth chapter shifts to integrated pest management (IPM), where the author emphasizes the need to shift all types of pest control activity towards integration, considering safety and environment as the predominant focus in modern pest control activity. The author emphasizes that value addition will help consumers distinguish IPM from conventional pest control, and eventually select it as the method of choice. The key value addition of IPM which would appeal to the consumer most, is to undertake pest control with reduced active ingredient in use.

The last chapter covers handling pesticides, a much-needed information when it comes to practising pest control. Information on recognizing various hazard marks and hazard symbols with colour illustrations is a significant inclusion.

Overall the book is a timely introduction to the urban and household pest management community and practitioners who lack reading material, books and institutional courses in the country.

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