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BOOK REVIEW

Nematode Behaviour (Eds. R. Gaugler and A.L. Bilgrami). CABI Publishing, 2004, ISBN 0 85199 8186, XXIV + 419 pp.

The book is dedicated to the memory of Neil Argo Croll (1941–1981), Professor of Parasitology at McGill University, a leading authority on nematology, who, more than 30 years ago, published the first work on the subject of behaviour of nematodes. Nematodes are a numerous (about a million species) and ubiquitous group of animals rivalled in biodiversity only by insects. They use all habitats, either directly (soil, food, body of hosts) or indirectly (water and air), as free-living forms or parasites.

The monograph, dealing with the behaviour of the phylum, was prepared by twenty authors from the U.S.A., U.K., India, Canada, and New Zealand. It includes thirteen chapters (plus an introduction and overview) supplemented with rich (sometimes over 180 items) and most recent (dated until 2003) references. Each of the concisely written chapters offers a comprehensive knowledge of the subject. The work is illustrated with a host of tables, diagrams and black and white pictures and has a jointly prepared index of taxons and terms. The authors, who are among the top experts in their fields, provide comprehensive information both to scientists (such as ecologists, parasitologists or taxonomists) and practitioners as well as to all others interested in this fascinating group of animals.

Introduction, co-authored by both editors, defines the term "behaviour", describes its types and gives a short overview of individual chapters. Chapter 1 (written by G.W. Yeates) deals with ecological and behavioural adaptations. It discusses the variety of habitats used by nematodes, their ecological requirements, migrations, ongoing adaptations, populations, food resources and feedback effects. Chapter 2 (A.H.J. Burr and A.F. Robinson), is entirely devoted to the locomotion behaviour and goes from an explanation of the mechanics of movement, illustrated by interesting diagrams and figures (also anatomic photographs) up to the presentation of motion in different environments. Chapter 3 (E. Riga) titled "Orientation Behaviour" discusses the types of receptors and ways of orientation of nematodes in the environment. In the next chapter, the authors (A.L. Bilgrami and R. Gaugler) describe the feeding apparatus and its function, food sources and feeding preferences as well as pre- and post-feeding nematode activities. A very interesting part of the book is a description of the reproduction behaviour (Chapter 5), in which R. Huettel stresses the variety of reproductive mechanisms developed in Nematoda for maintaining populations. The author suggests that manipulation of behaviour may become an important tool for limiting parasitic nematodes in the environment – by a reduction of soil infestations or animal infections. The chapter titled "Ageing and Developmental Behaviour" (E.E. Lewis and E.E. Perez) focuses on the diversity of behaviour of different stages of free-living and parasitic nematodes. Chapter 7 (D.J. Wright) about osmoregulatory and excretory behaviours is concerned with physiology and ecology and refers directly to Chapter 8 titled "Physiological and Biochemical Basis of Behaviour" (R.N. Perry and A.G. Maule), which deals mainly with the functioning of nervous and muscular systems. It is worth noting that in Chapter 9 "Molecular Basis for Behaviour" the reader is offered an insight which is well-grounded in molecular biology (M.M. Barr and J. Hu). This part of book deals mainly with the species *Caenorhabditis elegans*. The nematode was studied broadly in many aspects and was also the first multicellular organism to have its genome completely sequenced. As a result, a wide review of molecular tools, useful for analysing behaviours, as well as the conclusions presented, are focused on this species. Chapter 10 (P. Timper and K.G. Davies) discusses biotic interactions including two of their opposing forms – phoresy (facultative transport, obligate transport, necromancy) and antagonism (predation, parasitism, amensalism and competition). Chapter 11 (M.E. Barbercheck and L. Duncan) deals with behavioural responses to physical and chemical factors, as well as different forms of energy (thermal and electromagnetic). The whole of Chapter 12 (B. Boag and G.W. Yeats) is devoted to population dynamics. It presents the current knowledge about spatial distribution of nematodes in different environments, seasonal fluctuations, population cycles and nematodes as bioindicators. The last chapter (D.A. Wharton) is focused on survival strategies with information about types of migrations, phoresis, ability to adapt to extreme conditions and resistance adaptations. Some excellent microphotographs taken by the author are an additional asset of the study.

As a conclusion, it can be said that the reader of the book receives a thorough knowledge of nematodes provided by various disciplines and based on a rich literature of the subject. A list of key words makes it easy to locate the most important problems. The book can thus be called a valuable guidebook to the problems of the youngest discipline of zoology – nematology. Rather understandably, parasitological subjects are presented in the monograph in a limited way only, as the authors are interested in all aspects of the life of this extraordinarily varied group of animals. However, to understand many aspects of parasitic nematodes' life, it is necessary to refer to their primitive and unspecialised free-living forms, their "life style" which is a starting point for specialization in parasitism. The work can thus make very interesting reading even for those readers who are only secondarily interested in nematodes.

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