

Illustrated Dictionary of Parasitology in the Post-genomic Era

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Cover design adapted from the following figures: balantidiasis, copulatory bursa and midges (courtesy: Parasitic Diseases, 6th edn. Despommier, D.D., D. Griffin, R.W. Gwadz, P.J. Hotez, C. Knirsch. Parasites Without Borders, Pubs. 2017); hard ticks (courtesy: Elsheikha H.M., Khan N.A. Essentials of Veterinary Parasitology, 1st edition, Caister Academic Press. 2011.); erratic parasite (courtesy: Vito Colella, University of Bari, Bari, Italy); and giant cell.

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Preface

The number of infectious diseases in the world today seems to be increasing rather than decreasing as one would hope, especially new and emerging viral diseases that either did not exist previously or were not recognized. Despite this, malaria, a parasitic disease caused by *Plasmodium* spp., remains the number one infectious disease worldwide. Almost 12 years have elapsed since the *Dictionary of Parasitology* by Peter J Gosling was published, more than a decade marked by extensive discoveries and developments related to the field of parasitology. The dramatic shift from a parasite-focused subject to a field in which the emphasis is on the interaction between the parasite and its host organism has led to major breakthroughs in understanding the pathobiology of many parasites at a more in-depth level. More exciting is the discovery of the mechanisms by which some helminthic parasites modulate host immune response and their applications in medicine to cure chronic diseases, which are now being translated into therapies that are not only symptomatic but also potentially disease modifying. These research advances have stimulated a broader interest in parasitology among many researchers in other fields, such as medicine and bioscience. Historically, parasitologists have maintained a unique parasite nomenclature (e.g. *Dictyocaulus*, *Dracunculus*, *Leishmania*, *Angiostrongylus*) and terminology (e.g. hypobiosis, vector, xenodiagnosis) that has often puzzled their colleagues in other fields, causing them to associate parasitology to a black box. In the meantime, like most scientific disciplines, parasitology

has become more cross-disciplinary with fast-growing vocabularies, which are new to parasitologists. Therefore, it is necessary to develop a new dictionary to help both parasitologists and non-parasitologists to grasp the contemporary concepts and terms used in modern parasitology and associated scientific areas.

The first edition of the *Illustrated Dictionary of Parasitology in the Post-genomic Era* comes at a time when the topic of 'one health' and its medical, veterinary and environmental impacts are at the forefront of news stories and political discussions. Successful implementation of the 'one health' initiative requires cross-fertilization between different disciplines, which will improve our understanding of the mechanisms underlying host-pathogen dynamic interactions. With over 4500 entries, illustrated with more than 170 images and line drawings, and reflecting ground-breaking advances in parasitology research this dictionary provides, in a single-volume, up-to-date resources for the many terms encountered in contemporary parasitological literature. The dictionary also covers many pertinent terms from related fields of veterinary medicine and life sciences, such as microbiology, genetics, biochemistry, biotechnology, infectious diseases, epidemiology, zoonosis, public health, molecular biology, zoology, pharmaceutical science, environmental science, taxonomy, and population genetics.

This dictionary will serve as a guide for students, academic staff, medical and veterinary professionals, and life scientists, as well as for members of industrial establishments,

governmental agencies and research foundations involved in research activities relating to parasitology and associated scientific fields.

Finally, this book could not have been

delivered in such a professional way without the help of the professional staff of Caister Academic Press and Prepress Projects Ltd. Their help is deeply appreciated.

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Courtesy: Parasitic Diseases, 6th edn. Des-pommier, D.D., D. Griffin, R.W. Gwadz, P.J. Hotez, C. Knirsch. Parasites Without Borders, Pubs. 2017.

- amoebic liver abscess, babesiosis, balantidiasis, Bancroftian filariasis, bed bugs, Chagas disease, clonorchiasis, coccidia, copulatory bursa, cryptosporidiosis, crypts, cutaneous leishmaniasis, cyclophyllidea, cyclozoonosis, cysticercoid, egg capsule, egg membrane, *Enterobius vermicularis*, erythrocytic asexual-stage schizonts, gametocyte, hepatosplenic schistosomiasis, inner shell, Kato–Katz method, lymphatic filariasis, metacyclic promastigotes, midges, miracidia hatching, nurse cell, *Onchocerca cervicalis*, *Onchocerca ochengi*, operculum, polar plugs, proglottid, promastigote, proto-scolex, pulicide, rostellum, salivarian, scolex, soil-transmitted helminths, sporocyst, strongyloidiasis, sucking disk, taeniasis, toxocariasis, triatomid bug, *Trichinella spiralis*, *Trichuris trichura*, trypomastigote, tsetse fly, urinary schistosomiasis, vacuole, xenodiagnosis.

Courtesy: Elsheikha H.M., Khan N.A. Essentials of Veterinary Parasitology, 1st edition, Caister Academic Press. 2011.

- *Anoplocephala perfoliata*, bottle jaw, bursa, cestodes, cyst, *Haematobia irritans*, haematophagous, hard ticks, hexacanth embryo, hydatid cyst, hydatid sand, paramphistome, psoroptic mange, pyriform apparatus, strobilation, thelaziosis, tick pyaemia of sheep, whipworms.

Courtesy: Veterinary Business Development Ltd.

- acetabulum, blowfly, Branchiura, *Ctenocephalides felis*, ciliata, Crustacea, insect pupa, leishmaniasis, macronucleus, myiasis, nemathelminthes, puparium, *Varroa*, zoonosis.

Courtesy: Bristol University tick ID online resource with the kind permission of Professor Richard Wall.

- *Dermacentor reticulatus*, *Ixodes ricinus*, *Rhipicephalus sanguineus*.

Courtesy: Bayer Animal health.

- angiostrongylosis, aelurostrongylosis.

Courtesy: Dr JP Dubey, USDA, Beltsville, Maryland, USA.

- bradyzoite.

Courtesy: Emma Drinkall, University of Nottingham, Nottingham, UK.

- life cycle, *Ligula intestinalis*.

Courtesy: Vito Colella, University of Bari, Bari, Italy.

- erratic parasite.

Illustrated Dictionary of Parasitology in the Post-genomic Era. By Hany M. Elsheikha and Edward L. Jarroll . Caister Academic Press. To send this article to your Kindle, first ensure no-reply@cambridge.org is added to your Approved Personal Document E-mail List under your Personal Document Settings on the Manage Your Content and Devices page of your Amazon account. Then enter the "name" part of your Kindle email address below. Find out more about sending to your Kindle. Find out more about sending to your Kindle. PDF | This illustrated dictionary provides concise definitions and explanations of parasitology terms and related molecular processes presented in an | Find, read and cite all the research you need on ResearchGate. Download full-text PDF. Illustrated Dictionary of Parasitology in the Post-Genomic Era. Book · July 2017 with 1,174 Reads. How we measure 'reads'. This illustrated dictionary provides concise definitions and explanations of parasitology terms and related molecular processes presented in an easy-to-use, A-Z order with particular emphasis on terms that are of relevance to parasite biotechnology and molecular biology. With over 4500 entries and more than 170 figures this volume reflects recent, ground-breaking advances in parasitology research. The authors have provided, in a single-volume, an up-to-date glossary of the terminology encountered in contemporary parasitology literature.

Probably the most important aspect of the post-genomic era (i.e. after the sequencing has been carried out) is analysis of the primary sequence data. This is called bioinformatics and embraces a range of theoretical analyses aimed at converting the DNA sequence into biological information.Â genetic modification and promising candidates used in vaccine production. Parasite metabolic pathways not present in the host could also be targeted with potent inhibitors that are non-toxic to humans; and parasite drug-resistance mechanisms could also be targeted, giving existing drugs a longer effective lifetime.