



Book review

Bad timing and global pestilence

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Given an altering global disease landscape, encompassing the identity, pathology, demographics and our molecular level knowledge, an overview of infectious agents considered newly on the map is most welcome, but also questionable. It is welcome because any distillation by informed experts of so much varied information is obviously a huge asset, but questionable in terms of timeliness, topicality and authority – it is a hard task indeed to hit all three of these markers in equal measure. I was pleased to open a copy of *Emerging Protozoan Pathogens*, which certainly fulfills many of these needs. The major pathogenic protozoa, both in terms of disease impact and research activity, specifically the Trypanosomatids and *Plasmodium* spp., have received considerable coverage of late, and have been well dealt with extensively in other volumes; it is a sensible decision to not cover this ground again. The present book has a somewhat unusual organization; the first sections, and the major part of the book, deal with individual protozoa in some depth. These chapters are organized as Apicomplexa, Ciliates etcetera, and this is the standard, familiar and logical way to go. I was however, unsure of the precise criteria for inclusion of an organism; specifically *Toxoplasma gondii*, *Trichomonas vaginalis* and *Giardia intestinalis* have well and truly emerged, both as important and wide-ranging pathogens with significant disease burden and as major model organisms with sizeable and growing communities of basic and clinical researchers; *T. gondii* in particular is the focus of huge levels of activity. The final three sections, entitled Protozoan Pathogens of Major Medical Importance, Protozoan Biology and Host Response are rather odd bedfellows for the preceding work, and all authored by the editor.

The major bulk of the book is devoted to authoritative chapters dealing with many aspects of the biology, pathology, treatment and diagnosis of protozoan pathogens, ranging from *Naegleria* and *Acanthamoeba*, to *Babesia* and *Trichomonas*. These chapters are clearly the major intent of the work, and provide, for the most part, excellent discussions of the field. The work cited is up to date, with many references from 2006 to 2007 being reviewed, and for those systems where I have a fair knowledge, the contributions are balanced, detailed and well written. The inclusion of some methodological detail for culturing of several of the parasites is also of use, especially if readers are considering work on these organisms. The structure of

each chapter varies quite considerably, and this can occasionally be a little confusing. One low point is the quality of reproduction of figures; in particular many of the micrographs are clearly of excellent quality, but the rather low level resolution of printing, on low to medium stock paper diminishes these images; a very small selection are reproduced in color, but a fair number of the images would have benefited from this.

The importance of this area in the more general clinical and public health context is rather well illustrated by the chapter on *Naegleria fowleri*, a species with which I had previously almost no knowledge. This organism can give rise to a rapid and nearly invariably fatal encephalitis; the rapidity of progression to death is alarming, and clearly the comparatively rare status of the disease is an additional confounding problem, as symptoms are in common with many other infectious agents. Several of the organisms discussed here, or at least pathological events arising from their presence, are at present quite rare, although the high incidence of *T. gondii* infection and its emergence as a serious threat due to loss of immune competence is a salutary lesson. With more strain being put on water supplies, increasingly dense urban lifestyles with concomitant easing of transmission barriers and rising sewerage disposal problems, the likelihood that many of these protozoa will become a more familiar part of the disease spectrum is depressingly high.

Perhaps the most serious omissions are the complete lack of treatment of genomic data, which is a general criticism of the volume and available for a great many parasitic protozoa, including the majority of those discussed here and/or their free-living relatives. The systematics is also outdated in places. This leads to *Naegleria*, for example, being classed as an Amoebozoa, when it is clearly an excavate and closely (comparatively) related to trypanosomes, but not *Entamoeba*. This new taxonomy was formalized as far back as 2005, and hence could have been included. While these issues may be due to the publishing lead time, this is very unfortunate timing.

The overview of Protozoan Pathogens runs to all of three pages, and provides nothing that cannot be found in a standard textbook; it is difficult to understand why this is present as the organisms are not treated in depth elsewhere in this volume. There are some important inaccuracies and omissions here, for example the replicative stages of trypanosomatids are referred to as trypomastigotes, not trophozoites as stated and there is no mention of cerebral malaria, the most severe and dangerous form of the disease. The penultimate chapter deals with Protozoan Biology, and again this is a very brief section to encompass such a huge topic. This section again has difficulty in dealing with the depth of knowledge that we now possess for many of these systems, as advances in the past decade have been simply staggering. The final chapter turns to host responses, considered in the context of both host immunology and the virulence mechanisms that the parasites have on board. Again, this section is too brief to be of any real use for such a huge subject, and compounded by some errors and omissions; the most obvious to this reader being the absence of discussion of antigenic variation in *Plasmodium* and the implication that most VSG switching in *Trypanosoma* is confined to intrachromosomal recombination – in fact

the opposite is probably true. It is not clear what purpose these sections are intended to serve; are they an attempt to provide comprehensiveness, plug a gap in commission, provide a taster for further reading or for some teaching task? Regardless, this material is better covered elsewhere.

Publishers have a duty of care to their authors and editors, who work hard for accuracy and balance, are usually unpaid or are only in expectation of a small royalty return, and if they are lucky, a copy of the book. When I opened *Emerging Protozoan Pathogens*, I was struck by several things – the poor quality cover design, really low grade reproduction of the black and white figures, and also by a leaf, that popped straight out. The binding here is so dismally cheap as to make one ask how long the publisher thinks this book will be retained, or how often it will be thumbed – it is presumably not intended to be as disposable as a manga graphic novel. Publishers continue to benefit from the efforts and intellectual property of state and charity-funded scientists; the claim that some “added value” is provided is increasingly difficult to justify, and more so when the most basic of workmanship is shoddy and one wonders at the endless onslaught of monographs, books and journals. Poor quality is a discredit to both contributors and publishing house.

In conclusion, *Emerging Protozoan Pathogens* is a useful addition to the canon, and for anyone unfamiliar with the pathogens it considers this is a good introduction. The idiosyncratic aspects of organization, subject and absence of a genomic perspective limit its scope and, ultimately I suspect, shelf-life, but in the interim, this is a most welcome newcomer which deserves a place on the desk of parasitologists and protozoologists.

FURTHER READING

- [1] *Emerging Protozoan Pathogens* (A.H., Khan, (ed), Taylor and Francis, New York).

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