

## Literature reviews

***Biological control of vertebrate pests: The history of myxomatosis – an experiment in evolution***, F. Fenner, B. Fantini, CABI Publishing, Wallingford, Oxon, UK, 1999, 352 p., ISBN 0-85199-323-0, £60.00.

Although the first title of the book indicates a very broad topic, its second sentence is already more precise. The idea is to present the history of myxomatosis, from its discovery in 1896 to nowadays (end of the 1990s); that is during the first century of its official existence, in countries where it now exists, as well as the history of the scientists who worked on it, which is the case of the two authors.

Ten out of the 14 chapters of the book are fully devoted to the European rabbit or to myxomatosis. Only 4 chapters deal in a broader way with those species considered as pests, biological control of diseases or host-pathogen co-evolution. Even then, the European rabbit is often the example. One chapter deals with rabbit viral haemorrhagic disease (VHD, a Calicivirus). So, the title of the book could probably have been a little more accurate. Each chapter ends with its own, quite complete bibliography, where non-English written references are really present.

The first author being of Australian origin – as his fellow colleagues, is presented with a biographical notice within the book –, it is easy to understand why the rabbit is classified as a pest here, even in the title of the book. It would have been different from a European point of view, since the species originated from this area. This is clear for instance in chapter 9, Myxomatosis in France, with biographical notices on A. Delille, H. Jacotot and L. Joubert. A paragraph is devoted to the French attitude towards the rabbit.

In fact, this book is quite original since it brings together, around the subject of rabbit-myxomatosis, quite a lot of different topics, like historical facts, scientific data, human attitudes and country's points of view. This ends with very rich documentation on a nice model of the study of a host-pathogen relationship in the field. The story of the American rabbit (*Sylvilagus* sp.), the natural host of the myxomatosis virus, is not forgotten. The impact of the disease on the European rabbit population is compared to the impact on Australian rabbit populations, recently introduced at that time. Ecological and epidemiological situations are really different. The fact that in Australia, rabbits have recovered the density they had before myxomatosis time, which is not what happened in France for instance, may be a surprise. The explanation could be more in the deeper landscape transformations that Western Europe underwent during these last 50 years than in a molecular shift of the virus or in a genetic resistance of Australian rabbits. The evolution of the virus strains and of a possible resistance of the rabbits have been of concern to European and Australian scientists during these last 50 years. However, the collection of new strains seemed to be more important to scientists in Europe than the recording of epidemiological data, and a lot has been lost. The real figures of the disease will probably be impossible to reconstruct, especially considering that many rabbits have been moved from one region to another, mainly for hunting purposes.

Myxomatosis still has a lot to teach us. Biological control of disease is a difficult tool. The European rabbit was introduced into Australia, then myxomatosis was

introduced to control the rabbits, followed by another virus (VHD). Maybe it would have been easier not to introduce the rabbit in the beginning.... The introduction of wildlife (animals and plants) all over the world explains some of these so called emerging diseases.

In conclusion, a book that is easy to read, and that brings up a lot of important questions.

François Moutou  
AFSSA, Maisons-Alfort  
France

***Salmonella in domestic animals***, C. Wray, A. Wray, CABI Publishing, Wallingford, Oxon, UK/New-York, USA, March 2000, 480 pages, ISBN 0 85199 261 7, £95.00 (US\$ 175.00).

Until now, no reference or review book has been available on *Salmonella* and animals. Since *Salmonella* is one of the major causes of zoonotic infection in the world, extensive literature has been produced on the bacteria and its multiple serovars, the virulence mechanisms and the susceptibility of the different animal host species.

So the publication of this first reference book on the various and complex relations between *Salmonella* and domestic animals, not only livestock and farm animals but also pets and companion animals, have to be emphasised. In “*Salmonella* in domestic animals” co-ordinated by C. Wray from England and A. Wray from the USA, each author is a known specialist for the topic he reports on.

The book is divided into five sections:

– The “characteristics of *Salmonella*” comprises three chapters: one on the taxonomy of the genus *Salmonella* (with all details on how to correctly write *Salmonella enterica* subsp. *enterica* serovar Typhimurium, namely *Salmonella* Typhimurium), one on the surface polysaccharides, and the last one on all known aspects of the structure and functions of fimbriae. Even if there has been a renewed interest in the molecular and antigenic characterisation of these *Salmonella* organelles, it is difficult today to evaluate their respective importance and role in the virulence mechanisms.

– The “virulence of *Salmonella*” is also covered in three chapters: one on the genetic basis of virulence which underlines that even though inbred mice have been extensively used as a model of *Salmonella* virulence, this model does not represent all aspects of *Salmonella* infections (and specially all infections which are not typhoid-like), a second one on host susceptibility, resistance and immunity which comprises the prospected benefits of a better understanding of this field on animal genetics and vaccination, and a third one on antibiotic resistance because in the last decade, extensive attention has been paid on the antibiotic resistance of Typhimurium in relation to the widespread diffusion of the resistant clone DT104.

– The section on “infection in animals” includes nine chapters, each one devoted to a particular animal species (the fowl, turkey, duck, cattle, pig, sheep, horse, dog and cat). The chapter entitled public health aspects of salmonella infection reviews the trends and

vehicles of infection in Europe, as well as clinical manifestations and infective doses (as far as they are known).

– “Epidemiology and prevention” first takes into account the environment with a chapter on the spread, survival and cycling of *Salmonella* (reservoirs and disseminators) since *Salmonella* are environmental organisms before being pathogens and a reduction in the release of this micro-organism in the global environment is not expected in the near future. The three following chapters (*Salmonella* in animal feed, Competitive Exclusion and Vaccination) are more devoted to intensive animal husbandry. These chapters are mainly documented with references from the avian sector since poultry is the production for which the early application of a complex intestinal flora (CE) to newborns is best applied and where most of the trials with vaccines have been conducted. Finally, this section contains a chapter with all theoretical and practical details and advises on epidemiology in the human population. It is best to read it before planning an epidemiological study or a *Salmonella* outbreak investigation.

– The last section entitled “laboratory methods” reviews the two diagnostic methods (bacterial isolation and serological detection) and gives an overview on rapid methods that is divided into two parts: modified conventional methods and non-isolation techniques. Specific laboratory aspects in relation to biochemical identification and different typing methods (biotyping, serotyping, phage typing and molecular typing) make up two more chapters which are both excellent literature reviews of the subject and also practical guides for technical applications.

Even if the more specialised chapters on each animal species will perhaps have a more restricted public, the whole book is an exhaustive review for scientists, veterinarians, students and also people in the medical field involved in the *Salmonella* problem.

Florence Humbert  
AFSSA, Ploufragan  
France

***Veterinary Helminthology***, T. Kassai, Butterworth-Heinemann, Oxford, UK, 2000, 260 pages, ISBN 0 750635630, £35.

This book is clearly dedicated to veterinarians. It is constituted of four parts (Helminths as disease agents, Anthelmintic therapy and control, Diagnostic helminthology, Summary charts of egg and larval count techniques and figures of helminth eggs) and appendices related to abbreviations and a brief (5 pages) multilingual dictionary of major helminths. The latter is not very useful due to its brevity and several mistakes (in Spanish “duelas” means something else than *Fasciola* and “strongle” is French for strongyles). The first part (141 pages) is the core of the book. The life cycles are taken and translated from the French “*Abrégé de parasitologie vétérinaire*, Vol. III, Helminthologie vétérinaire, 2nd ed., Le Point Vétérinaire, 1995” and much of the text is in the same style as in the cited book. One should notice that several mistakes have been made in the life cycles: the anisakids for example do not use fish or squids as intermediary hosts (this would be a necessary step) and are only paratenic hosts e.g.

they can harbour the nematodes without any development and their role is to concentrate infective larvae. I think this part concerning life-cycles will not be of high interest for a French reader (since this is already available in French) but will interest English speaking veterinarians. The second part explains how anthelmintic therapy and control can be managed (33 pages) and is a good review of what can be done in the area. I wonder if I would not prefer reading recent reviews or issues of a parasitology journal for this aspect. The difference between sheep and goats concerning efficacy and dosage is not very well documented: it is nearly clear that most drugs should be given at nearly double dosage in goats and this is not mentioned. The Diagnostic part (20 pages) is really too reduced to really compete with the excellent manual compiled by the Ministry of Agriculture, Forestry and Fisheries in Great-Britain. The summary charts of eggs and larvae are similar, but more complete, than the ones proposed in Soulsby's manual.

This book is not intended for very specialised helminthologists or biologists, who can find the information they are looking for in other books, strictly dedicated to a group of worms. I rather see it as a helpful manual for veterinary students and veterinarian practitioners.

Jacques Cabaret  
INRA, Tours  
France