

Book reviews

***The Fats of Life.* Caroline Pond. Cambridge: Cambridge University Press. 1998. £35.00 ISBN 0 521 58321 7 (hardback) £12.95 ISBN 0 521 63577 2 (paperback)**

Fats are found throughout the living world and this book brings together the diverse roles of fats in nature in a popular science format. Caroline Pond's passion for lipids and for the natural world is apparent as the functions of fat are explained in simple terms that make the book fairly easy to read. A wealth of information is gleaned from a wide area, and the book will be of interest to the scientific as well as the lay reader.

The book counteracts the bad press that fats often get, dispelling the idea that fatty tissue '... has no rightful place of its own and expands untidily into parts of the body where it is not welcome'. Indeed, being fat from time to time is indispensable for many organisms as Pond explains with reference to her own studies of comparative anatomy. The book is well interspersed with excellent anecdotes.

The first few chapters introduce the varied biochemistry of lipids with a whole chapter on fatty acids. The middle section of the book deals with 'lipids in action' and evidence from experimental models provides examples of how organisms deal with lipids. With reference to wild animal studies, the collation of the ecological and physiological roles of adipose tissue make interesting reading. Arguments are put forward to challenge the view that fat is adapted to thermal insulation and mechanical protection.

The book has an attractive cover and contains a balance of charming black and white line drawings as well as scientific figures. It is not well endowed with illustrations, but this reflects the fact that it is written in essay form rather than as reference material. There are plenty of sub-headings, which helps to follow the progression of the discussion, which sometimes seems to be repetitive, and the reader is occasionally referred to previous and future chapters. There is no glossary but there are notes and references to each chapter at the end of the book.

The final chapters deal with us humans, and drawing on archaeological, anthropological and physiological evidence, tries to establish when and why people became fat; but the answers are not so easy to come by as in animals. The 'aquatic ape' hypothesis, although far-fetched, is fun to read. Fats and health are only a small section of this interesting book, and, in keeping with earlier chapters, beneficial attributes of fat are highlighted, as well as the negative effects which receive so much bad press.

Barbara Fielding

***Comparative Avian Nutrition.* Kirk C. Klasing. Wallingford, Oxon and New York: CAB International. 1998. £55.00 ISBN 0 85199 219 6**

The nutrition of wild birds has been a comparatively neglected area of study by field ecologists. This is rather surprising, considering our very detailed knowledge on poultry nutrition. But unfortunately, workers on domestic and wild birds tend to plough separate furrows, and are frequently not aware of each other's work.

This book on comparative avian nutrition is extremely timely. There is increasing interest in avian nutrition from field ecologists, those responsible for maintaining captive bird collections, and conservation projects involving wild birds or captive breeding programmes. The only texts available have been either those intended for the poultry industry, or general texts on wildlife nutrition in which birds occupy a rather minor role. This is the first book to give a detailed, comparative coverage of avian nutrition. It is aimed as an introductory text and does not assume previous knowledge of nutrition. It gives enough general information to make it useful to readers from any discipline. At the same time it provides a detailed synthesis of the poultry literature together with that based on wild birds.

The first half of the book includes a brief chapter to point out the diversity of food items taken by birds. The basic anatomy and physiology of their digestive tract is then described together with the main features of avian food digestion. Apparently a turkey gizzard can crack walnuts, so the lack of teeth in birds does not mean they cannot achieve effective mechanical breakdown elsewhere in the gut.

There are then chapters on general energy metabolism, a topic which has been extensively reviewed elsewhere, and a brief introduction to nutritional requirements and the problems of identifying deficiencies. The most detailed chapters cover amino acid, lipid, mineral and vitamin requirements. Birds may have highly seasonal variation in their nutritional requirements, caused by the high maternal investment made in egg production during the breeding season, the requirements of feather synthesis during moult, and in many species the need to lay down extensive body reserves for migration. These aspects are well covered, together with normal nutritional requirements for routine maintenance.

The literature review is thorough, and rightly concentrates on work on wild birds, for there are already good texts available on poultry nutrition. One of the great attractions of the book is the clarity of the writing, and this book can be highly recommended to anyone working on birds with an interest in practical nutrition.

David C. Houston