Book Reviews

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shoe hares in Ontario. Canadian Journal of Zoology 61: 1339–1345.

WINDBERG, L. A., AND L. B. KEITH. 1976. Snowshoe hare population response to artificially high densities. Journal of Mammalogy 57: 523–553.

YUILL, T. M. 1964. Effects of gastro-intestinal parasites on cottontails. The Journal of Wildlife Management 28: 20–26.

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BOOK REVIEW . . .

Bacterial Protein Toxins, P. Falmagne, J. E. Alouf, F. J. Fehrenbach, J. Jeljaszewics, and M. Thelestam (eds.). Gustav Fischer Verlag, Stuttgart, Germany (U.S. Edition, VCH Publishers Inc., Dearfield Beach, Florida 33442, USA). 1986. 398 pp. $83.75 U.S.

This volume is a compilation of abstracts and complete short papers presented at the second European workshop on bacterial protein toxins held in Wepion, Belgium, 30 June to 4 July 1985. Topics covering the major aspects of bacterial protein toxins included structure, mode of action, interaction with cell receptors and membranes, synthesis, regulation, secretion, internalization and pathogenicity. Also included are aspects of applied toxinology in medicine and agriculture through the use of either wild-type or chemically or genetically modified toxins.

The symposium primarily dealt with human pathogens such as *Escherichia coli, Cornybacterium diptheriae, Salmonella* spp., *Pseudomonas aeruginosa,* and *Staphylococcus aureus.* Only a few pathogens of animals are included (e.g., *Bacillus anthracis*), only because they also are important to humans. Most of the papers are highly technical and deal with the subject matter on a cellular and subcellular level. One chapter by J. E. Alouf provides a good overview of the effects of bacterial protein toxins on host immunologic defense mechanisms. Another paper by Luthy et al. contains an excellent summary of the pathogenic action of *Bacillus thuringiensis* toxin in arthropods. The last section of the book deals with techniques of cloning bacterial toxins for possible vaccine development.

In general, this book probably is concerned too much with human pathogens and the cellular and subcellular mechanisms of action of their toxins to be useful to most wildlife disease biologists. Additionally, the book already is out of date since the conference was held 3 yr ago and the third workshop already has taken place (28 June to 2 July 1987, Oberlingen, Federal Republic of Germany); presumably, the proceedings from this conference also will be published.

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BOOK REVIEW . . .

Clinical Avian Medicine and Surgery, G. J. Harrison and L. R. Harrison. W. B. Saunders Co., Philadelphia, Pennsylvania, USA. 1986. 717 pp. $39.95 U.S.

During the past decade, interest in and experience with clinical management of the individual avian patient have increased at an unprecedented rate. While the growth in knowledge has been significant, it is clear upon examination of the literature that avian medicine and surgery remains in its infancy. The authors of this text, with the aid of 33 contributors, have produced a work that will solidify the foundation of avian clinical practice.

Clinical Avian Medicine and Surgery provides the most thorough examination of the subject area currently available, complete with the attendant controversies and gaps in knowledge expected in a new and developing field. The book consists of 53 chapters that are divided among eight sections entitled respectively—The Pet Bird: General Considerations; The Normal Bird; A Clinical Approach; Diagnostic Procedures; Therapy Considerations; Diseases; Surgery; and lastly, Aviculture.

It should be made clear that the primary emphasis of this book is directed to those species commonly kept as pets, particularly members of the order Psittaciformes. The chapter on clinical anatomy, for example, uses the genus *Amazona* as its model and provides much information of use to the clinician, including some excellent new anatomical illustrations. Reviews of the regional anatomy of the cloaca, and of the structures of the psittacine cranial respiratory tract, including the cervico-cephalic air sac system, are outstanding. A chapter on differential diagnoses based on clinical signs will be helpful to the inexperienced practitioner. The authors stress the use of problem-defined data bases, and give examples to illustrate a more thorough approach to the work-up of avian cases.

An entire section is devoted to diagnostic procedures and is particularly useful. Traditional clinical investigative techniques including microbiology, biochemistry, cytology, endocrinology, serology and electrocardiography are reviewed. Procedures such as endoscopy, hematology and radiography are examined in light of their special value in the avian patient. The chapter on therapeutics contains the most current compendium of avian drugs and dosages available. The pages of this section are highlighted for rapid reference.

Chapters on viral, bacterial and chlamydial diseases are scholarly and collate much information worthy of the clinician's attention. The parasites of companion birds are ably discussed in a well-illustrated chapter. Tables comparing the characteristics of various parasites enhance the book's value as a reference for the clinician. Surgery and anesthesia receive adequate treatment. Harrison is to be commended for his pioneering work in microsurgery and for educating the practitioner about the value of magnification in routine avian work. As well, the usefulness of isoflurane in avian anesthesia is advanced; however, concentrations recommended for induction could lead to death in some species. In many areas authors rely upon informed clinical experience, where scientific evidence is lacking.

The final section of the book deals with veterinary aspects of aviculture and is unique. The chapters on avicultural management and pediatrics are outstanding. Eight helpful appendices and a thorough, easy-to-use index round out the text.

This volume, even with the limitations imposed by reliance on empirical data in some areas, is an impressive contribution to the clinical literature. It can be recommended to a wide audience including avian, wildlife and zoo veterinarians, ornithologists, aviculturalists and students. The problem with omnibus texts in rapidly growing fields is the need for frequent revision. The authors are to be commended. I await the second edition of this book with anticipation.

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BOOK REVIEW . . .

Comparative Genetic Toxicology, J. M. Parry and C. F. Arlett (eds.). VCH Publishers, 303 NW 12th Avenue, Deerfield Beach, Florida 33442, USA. 1985. 626 pp. $115.00 U.S.

The title of this book is misleading, in that one would expect to find general methodological discussions comparing the many techniques utilized in the determination of the genotoxic properties of chemical agents. However, such is not the case. As stated in the Preface, the book is actually a compilation of "a Second Collaborative Genotoxicity Study set up by the United Kingdom Environmental Mutagen Society (UKEMS) to use the collective resources of the Society to make an in-depth comparison of *in vitro* and *in vivo* methods of detecting potential carcinogens and mutagens." This Collaborative Study chose only to investigate two specific pairs of chemical analogues, benzidine (BZD) with 4,4″-diaminoterphenyl (DAT) and 4-dimethylaminobenzene (DAB) with 4-cyanodimethylaniline (CDA). BZD is a classic organic carcinogen which induces bladder tumors in exposed humans (males) and dogs and liver tumors in rats, and was used to compare the genotoxicity of the synthetic structural analogue DAT. DAB is an extensively studied hepatocarcinogen and was used as a reference compound for the genotoxicity testing of its synthetic structural analogue CDA.

The study objectives were to: (1) examine a range of S9 mix (metabolic activation systems) preparations which would optimally activate BZD and DAB (the reference compounds) in vitro, and these would be compared to the data observed with the "unknown" analogues DAT and CDA; and (2) determine the genotoxic activity of DAT and CDA in higher organisms (i.e., to test their potential for mammalian carcinogenicity). All test chemicals were synthesized, purified and supplied to each of the laboratories participating in the study by the ICI plc, Central Toxicology Laboratory (Alderley Park, Macclesfield, Cheshire, United Kingdom), to ensure uniformity of the agents to be assayed.

The Introduction of the book begins with the design of the study and a comprehensive survey of the literature on the two reference carcinogens. The book is then loosely divided into two sections, the larger of which deals with the in vitro objectives. Parts of this section include Bacterial Mutation (Core Study), a comparison of the two sets of compounds in bacterial mutagenicity assays; Modification of the Bacterial Mutagenicity Assays, variations on standard bacterial assay techniques; Yeast Genotoxicity Assays, assessment of in vitro mutagenicity using eucaryotic cell systems; Point Mutation Assays in Cultured Mammalian Cells, in vitro genotoxicity systems using various cell lines; In Vitro Cytogenetics, tests such as induction of sister chromatid exchange, chromosome aberrations and aneuploidy; Unscheduled DNA Synthesis, rat and HeLa cell DNA repair assays; and Comparison of S9 Preparations, the preparation and characterization of S9 fractions used in the assays.

The second division of the book presents data on the in vivo genotoxicity of the study compounds. Parts of this section include In Vivo Cytogenetics, micronuclei tests and chromosome aberration assays in rodents exposed to test chemicals; In Vivo Assays and the Metabolism of the Test Compounds, tissue distribution and DNA binding in the rat, as well as assays using *Drosophila* and mouse embryos (mammalian spot test), and a carcinogenicity bioassay with BZD and DAT in the rat. The book concludes with an overview of the data derived from both in vitro and in vivo test systems and attempts to draw conclusions about the genotoxicity of the "unknown" compounds DAT and CDA.

Throughout, the text is precisely organized, well referenced and has abundant tables and figures. The editors are also to be commended for the lack of typographical errors.

There is only one serious drawback to this book. As stated previously, the title leads one to believe that there will be useful comparisons demonstrated for techniques in genetic toxicology testing. This book, although well written and organized, is targeted to the scientific audience already familiar with the types of assays performed. For anyone with a research interest in the four chemicals tested, this would be the definitive volume. However, for someone with a peripheral interest in genetic toxicology desiring to become familiar with the techniques employed in the testing of genotoxic agents, this book has few in-depth discussions on the basic methodologies used. It assumes the reader is already knowledgeable about fundamental techniques. For this reason, as well as its substantial price tag, I cannot recommend the purchase of this book to anyone in the Wildlife Disease Association, unless the individual happens to fall into the narrowly defined category described above.

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