Book Reviews

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BOOK REVIEW . . .

Laboratory Techniques in Rabies, 4th ed., F.-X. Meslin, M. M. Kaplan, and H. Koprowski editors. World Health Organization, 1211 Geneva 27, Switzerland. 476 pp., $ 103.50 (Sw.fr. 115.- price in developing countries: Sw. fr. 80.50).

This text is a comprehensive reference manual which contains the compilation of information from renowned microbiologists of the world community. The research advances of the last two decades have made the revision of the 3rd edition (1973) imperative.

The manual is composed of six parts which are subdivided into 47 chapters and 4 appendices. In addition to revised chapters on standard diagnostic methods such as direct immunofluorescence (DIFA), mouse inoculation, isolation in cell cultures, detection of serum neutralizing antibodies, histopathologic examination, electron microscopy and updated methods for vaccine and immune globulin production, there are 12 new chapters dealing with molecular techniques (PCR and monoclonal antibodies), and several new methods for titration and detection of antirabies antibodies, genetically engineered vaccines and oral vaccination of wild animal species.

There are approximately sixty photographs which enhance the text. The electron micrographs are of excellent quality and resolution. The pictorial outline reviewing techniques for brain removal, and dissection of the hippocampus are extremely helpful to the inexperienced laboratorian. In addition the appendices provide practical information on several diverse topics such as the addresses of international institutions for technical cooperation in rabies, preparation of rabies conjugates, alternative methods for brain collection, and calculation of virus titers by the Spearman-Karber method.

The many additions to the book required relocation or elimination of some the older material. Unfortunately, some of this information is still essential to routine laboratory operations. An example is the elimination of the previous chapter, *Shipment of Specimens and Techniques for the Preparation of Animal Tissues.* Although methods for brain removal are described in the chapter, *Histopathological Diagnosis,* and the procedure for obtaining core samples of brain is described in the appendices, the material was best presented in a separate more inclusive chapter preceding the methods for virus detection in the previous edition. In addition, the basic information describing the packaging and shipment of rabies samples has been deleted. It would have been informative to include the rationale for safe packaging of etiologic agents, the current international regulations for the packaging and shipment of diagnostic samples and known biolevel II and III agents.

A more serious deficit of this volume, is the lack of revision for certain critical methods to reflect changes in reagents and equipment. For example, Chapter 7 (*Fluorescent Antibody Test*) requires additional revisions. The basic information concerning the technique is correct, but requirements of the fluorescent microscope need to be updated. Substage darkfield condensers are required only for transmitted (horizontal) illuminated microscopes. More efficient epi- (vertical) illuminated microscopes do not have this requirement. In addition, older transmitted illuminated microscopes required (low wavelength) UV excitation filters (e.g., UG-1) for rabies FA because light energy was lost by distance between source, condenser and sample. Newer microscopes contain efficient FITC filters which excite at maximum (490–495 nm) blue-violet wavelengths. Another error concerns the recommendation for testing salivary glands in addition to brain tissue from bats to which humans have had exposure. The examination of brain tissue by DIFA is sufficient to detect rabies in all mammals. There is no evidence to suggest rabies antigen could be detected by DIFA in salivary glands without its presence in CNS tissue.

In addition, Chapter 16 entitled *An In Vitro Virus Neutralization Test* is concise and well written, but the formula for PBS, pH 7.6 was not included. Unfortunately, an editorial comment refers the reader to a formula for PBS pH 7.0 in Chapter 20, Annex 2, with instructions to adjust the pH with NaOH. There are .01M PBS (pH 7.4–7.6 and pH 7.6–7.8) formulas with the recommended .01 molarity for rabies DIFA. The choice of the .05M PBS pH 7.0 formula seems questionable.

Another oversight occurs in Chapter 6, *Mouse Inoculation.* The comment is made that "although it is relatively immaterial which part of the brain tissue is chosen for the preparation of the suspension, preference is usually given to Ammon's horn, cerebellum and the cerebral cortex". Obviously the medulla (brain stem) was inadvertently omitted since rabies virus antigen is most frequently found in that tissue by DIFA. In addition, no references are cited for Chapters 4–7, 18, 38, 39, even though citations appeared in the previous edition. The omission of this material impedes ability to obtain the reference sources.

Since the principles of traditional methods (DIFA, isolation in cell culture, mouse inoculation, rapid fluorescent focus inhibition test) are well established, perhaps the next edition of the manual will contain a thorough rewrite and include additional technical information on equipment, problem solving issues, as well as comparisons of sensitivity with other test methods. Moreover additional chapters should include information on molecular epidemiology and clinical applications of PCR and immunohistochemical methods for rabies diagnosis.

The 4th edition of *Laboratory Techniques in Rabies* is the most comprehensive manual currently available for rabies procedures. This text should appeal to all laboratorians working in a rabies diagnostic laboratory, veterinary virologists, veterinary clinical pathologists, veterinary medical technologists, and medical microbiologists. It makes an excellent reference text for experienced researchers, procedural manual for diagnostic laboratories, and helpful training guide for the less experienced. However, individuals attempting to perform rabies diagnostic procedures should consult the national or regional reference laboratory for training and recommended methodologies, and read current journal articles on related topics.

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BOOK REVIEW . . .

The African Buffalo as a Game Ranch Animal. Proceedings of a symposium on the African buffalo as a game ranch animal. B. L. Penzhorn, editor. Wildlife group of the South African Veterinary Association, in collaboration with Wildlife Research Programme, Faculty of Veterinary Science, University of Pretoria, Onderstepoort, Republic of South Africa. 1996. ISBN 1-875088-08-3. $ 40.00 U.S., R100.00.

These proceedings are soft bound and total 198 pages. Orders are available from the Secretary, SAVA Wildlife Group, P.O. Box 12900, Onderstepoort, 0110, Republic of South Africa.

The proceedings represent a series of eighteen articles that range from 4–19 pages in length. All articles are written and edited in a similar style and many contain figures and tables. They reflect what appears to have been a comprehensive and focused symposium on a single species, the African buffalo (*Syncerus caffer*), and its current and further potential use as a ranched animal.

The subjects discussed in the articles are diverse, balancing many aspects of the subject matter. General information about the species is given, along with socio-ecological features, including habitat requirements and social structure. One paper discusses applied anatomy of the African buffalo. Management considerations are discussed in a few papers, and include information or census methods and population reduction techniques; capture techniques including drug and dosage recommendations; boma confinement, including boma specifications, nutrition, and clinical considerations; biological sampling techniques; transport and release; and disease management considerations. One paper addresses the potential use of the African buffalo for trophy hunting and meat production. Several papers consider reproduction, both in a general sense and also with regard to breeding Foot and Mouth Disease-free and Corridor Disease (*Theileria parva* infection)-free animals. Diseases of African buffalo are discussed in general terms, including viral, bacterial, protozoan and other parasitic diseases. In addition, particular attention is also given to parafilariasis, foot and mouth disease, tuberculosis and theileriosis.

The authors are mostly scientists and/or veterinarians actively involved in the subject matter. Almost all are from the Republic of South Africa and address concerns relevant to that country, although Zimbabwe and its policies are well represented in one paper. The authors represent a number of institutions and affiliations, including the Faculty of Veterinary Science at Onderstepoort, the Medical University of Southern Africa, the Onderstepoort Veterinary Research Institute, Kruger National Park, the South African State Veterinary Office, the Department of Human and Animal Physiology at the University of Stellenbosch, the Northern Game Association of South Africa, the Wildlife Breeding Research Centre of South Africa, Bayer Ltd. of South Africa, De Beers Consolidated Mines of South Africa, the National Veterinary Institute of Uppsala in Sweden, the Department of Veterinary Services of Zimbabwe, and the Zimbabwean Office of the World Wildlife Foundation.

I feel this volume is a useful contribution to the literature, bringing together many diverse aspects of the potential for game ranching of the African buffalo. The approaches used in some of the papers could also be applied to other species with the view of game ranching.

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