

separate host-wise chapters on postmortem diagnosis and control, again under zoological grouping. Methods of diagnosis wherever mentioned are insufficiently described to be of much value to the field laboratory staff.

A few manuals extant on the subject contain accounts of diagnostic techniques and requirements for biological products of the listed diseases. Some manuals produced by commercial houses contain excellent coloured photographs of the parasites and lesions, but do not provide sufficient information on diagnosis and control.

All these are of limited practical help to field veterinarians and staff of field laboratories, in the diagnosis of the parasites involved. Kaufmann has addressed the problem of reaching rapid and precise diagnosis of parasites involved.

Kaufmann is eminently suited to undertake this stupendous task as he has the experience of dealing with the subject both in the laboratory (he heads the Diagnostic Section of the Institute of Parasitology at University of Berne, Switzerland) and in the field as he worked in a field laboratory in Gambia in late 1980s. Besides the material collected by him then and used in the book, he has incorporated in it a lot of information gleaned from about 300 institutions and universities. He is the principal author and has tapped the expertise of some 74 scientists based in Africa and Europe who collaborated as contributors or advisers, in producing the book. The result is a unique, beautiful, practical and self-contained manual for rapid diagnosis and control of parasitic infections of domestic animals and poultry.

Though the book was primarily meant for use in Africa, it is of equal relevance elsewhere for rapid diagnosis of economically important parasitic infections occurring worldwide. A few gaps in the information of local importance can be easily filled in. The book is unique as it deals with the parasites host-wise, system-wise and organ-wise as a veterinarian encounters them in the field. As he collects material from sick animals, or performs postmortem examinations, the book keeps pace with him by providing information as to which parasite(s) to expect, and in establishing rapid specific diagnosis.

The first chapter is on METHODS

for identification of parasites by direct and indirect techniques. The former includes up-to-date methods for examination of faeces, blood, skin scrapings and tissues. Detailed descriptions of these methods have been given, viz. counting of ova and oocysts and their identification, recovery of lungworm larvae, culture and recovery of third stage larvae of nematodes and their identification, haematology including quick staining methods, viz. Diff-Quick®, QBC®, dark ground/phase contrast buffy coat, and skin scrapings.

As most parasites produce antibodies in blood these are detected by indirect immunological techniques – indirect fluorescent antibody test (IFAT) enzyme-linked immunosorbent assay (ELISA), immunoblotting (Western blot) and complement fixation test (CFT) adequate descriptions of which have been provided. These are specific antigen-antibody reactions. Within the limitations, the tests are useful in diagnosis of parasitic infections.

The above-noted techniques meet routine diagnostic requirements of field workers. But for epidemiological studies, molecular biological techniques for detection and identification of parasites using nucleic acid probes come in handy. The last section of the chapter describes the techniques based on DNA probes and PCR (polymerase chain reaction) or both: DNA-random amplification of polymorphic (RAPD)-PCR. These techniques being extremely sensitive and highly specific are finding increasing use in diagnostic parasitology.

The next six chapters describe parasites of cattle, sheep, horses and donkeys, dromedaries, swine and poultry, respectively. Each chapter is divided into 5 sections representing stages in which parasites may occur: in gut and faeces, blood and circulatory system, urinogenital system, internal organs, and on body surface, respectively. Under each stage, the parasites are described under protozoa, helminths and arthropods. Information on the parasites is presented under sub-heads: location, hosts, species description (morphology and life-cycle), geographic distribution, symptoms, significance, diagnosis, therapy and prophylaxis.

Rickettsiaceae (*Ehrlichia* spp., *Anaplasma* spp., *Cowdria ruminantium*, *Eperythrozoon* spp., and others) – a group of parasite-like pathogens often

seen in blood or tissue smears are also described for differential diagnosis.

The book is parasitology made-easy for field workers. It is a unique and 'well-conceived manual, intelligently and copiously illustrated'. It has some 300 colour and 400 black and white illustrations of parasites, their developmental stages, lesions, affected animals showing cardinal symptom(s), schematic diagnosis of life-cycles, keys, etc. The text is precise and concise. All this facilitates rapid diagnosis of parasitic infections of domestic animals under field conditions.

The book has been 'very reasonably' priced due to generous financial aid from three Swiss institutions (Ciba, Swiss Development Corporation and University of Berne). This brings the book within reach of veterinarians, meat inspectors, and teachers and students of veterinary parasitology who need it most.

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The State of Food and Agriculture. Food and Agriculture Organization of the United Nations, Rome, Italy. 1995. 301 pages.

The 1995 State of Food and Agriculture Report of FAO has chosen agricultural trade as its special feature. The other sections are common to the different reports and provide an overview of the current agricultural situation in the world. The data provided by FAO constitute the most authentic information available to agricultural researchers and policy makers. The data are dealt with both from a global and a regional perspective. Of particular interest is the detailed analysis of the food security challenges facing India.

In the section dealing with India, emphasis has been placed on the 1990 economic crisis arising from the large foreign debt and repayment liability. The steps taken by Government since then have been summarized in a meaningful manner. However, the following developments after the introduction of

the new Economic Policy in 1991 highlighted in the report merit careful consideration.

- The inward-looking, import substitution development strategy, which was aimed at rapid industrialization, shifted resources from tradable agriculture to industry by turning the terms of trade against agriculture.
- The overvaluation of the exchange rate subsidized imports and adversely affected all exports, especially agricultural exports.
- Most sector-specific policies at all stages of production, consumption and marketing of agricultural produce, worked against agriculture. For example, the price policy was in practice designed primarily to help the consumers. Farmers were generally given low administered prices in the name of helping the urban poor even when they had to pay higher prices for domestically produced inputs because of the protection given to local industry. In addition, a major proportion of the costs of the inefficient functioning of parastatal organizations, such as the Food Corporation of India, were borne by farmers.

The above problems continue to affect India's agricultural progress. The flow of credit to rural areas had gone down very steeply. It is only during the

last two years serious efforts have been initiated to reverse the drain of resources from the village to the town and city. Globalization of Indian agriculture offers both opportunities and challenges to policy makers. However, there is need for a coherent policy towards issues arising from globalization with particular reference to their impact on employment generation and rural livelihoods. Mass production technologies will kill the *production by masses approach*, which alone is relevant to our conditions of expanding population and shrinking per capita availability of land and water.

There is a detailed discussion on all aspects of agricultural trade. The report stresses that markets alone cannot ensure environmental quality and sustainable agricultural development. Private values often do not take account of social costs. The principles recommended for multilateral action under the World Trade Agreement include: non-discrimination, transparency, choice of measures that have minimum adverse environmental impact and commitment to the cause of eco-technologies. There is need to ensure a proper match between trade and environmental objectives.

As in the past years, the *State of Food and Agriculture 1995*, includes a computer diskette with time series data for about 150 countries.

In his foreword to the Report, Jacques Diouf, Director General of FAO has drawn attention to the World Food Summit scheduled to be held in November 1996 in Rome for the purpose of mobilizing concerted global action to

overcome problems of hunger and food insecurity. Diouf has pointed out that the deaths and sufferings associated with food insecurity are as unnecessary as they are intolerable. The end of hunger and malnutrition, far from being a utopian or poet's dream, is within the reach of our modern society's technology, resources and understanding of the underlying problems.

A similar conclusion was arrived at the Science Academies Summit on 'Uncommon Opportunities for a Food Secure World' held at Madras in July 1996. A summary of the conclusions of this Summit has already appeared in *Current Science* (1996, 71, 342-346). The Ten-Point Action Plan recommended by the Science Academies provides a blueprint for achieving food security at the level of each individual. There is no scientific, economic, environmental or political excuse for inaction in converting the opportunities opened up by modern science and technology for making endemic and poverty-induced hunger a problem of the past into field level accomplishment. The decision of the Government of Tamil Nadu to initiate a Hunger-Free Area Programme in the State is the first decisive step taken in our country to stress that ending hunger is an idea whose time has come.

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