

# ADVANCED PATHOLOGY & TREATMENT OF DISEASES OF DOMESTIC ANIMALS

*(With Special Reference to Etiology, Signs, Pathology and Management)*



### Highlights of this book :

- Bacterial diseases
- Viral diseases
- Protozoal diseases
- Parasitic diseases
- Deficiency diseases
- Pathologic changes in the cases of poisoning
- Miscellaneous pathologic conditions
  - Some metabolic disorders
  - Common therapeutic agents
- Patent preparations and vaccines
  - Postmortem Examination

The text of this book is easy to understand and has been written with this object in mind. The language is simple with clear **explanations** and systematic presentations. The author's commitment to **information** on the pathology and treatment of diseases of animals is total. Emphasis is placed on definitions, symptoms, gross and microscopic lesions and treatment of diseases of Animals.



**Dr. C.D.N. Singh**, a former University Professor cum- Chairman, Department of Pathology, Bihar Veterinary College, Patna was a very popular teachers amongst the students He was chosen to be biographed in Marqui's Who's Who in the World (15<sup>th</sup> edition for his achievements and research papers published in Indian and Foreign Veterinary Journals. A recent publication of Dr. Singh under the title

'Advanced Pathology and Treatment of Diseases of Poultry has been widely acclaimed by the students and the teachers in the Veterinary Colleges.



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C.D.N. Singh



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*Dedicated to*

*Lord Pawan Putr Hanuman Ji and  
to the memory of Late Veena singh,  
wife of the author*

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राजभवन, पटना  
RAJ BHAVAN  
PATNA, 800 022

23 February, 2007

**MESSAGE**

I am glad to note that the book "Advanced Pathology and Treatment of Diseases of Domestic Animals" written by Shri C.D.N. Singh will be usefull for veterinary students. The user will find the book useful.

I wish success of the publication.

  
(R.S. Gavai)

## Preface

The book grew out of more than three decades of teaching and the schematic structure of the text has been designed to cater to the needs and problems of the students in both undergraduate and postgraduate courses in the veterinary colleges, diagnosticians and veterinary practitioners engaged in the diagnosis and treatment of animal diseases. The VCI syllabi followed in different agricultural universities have been kept in view in preparing the manuscripts of this book for inserting pertinent pathological changes noticed in different animal diseases and relevant information on the management and treatment needed with the object of making this book of high value to the students, teachers and veterinary practitioners. The book has been written in a simple easy and lucid language with more emphasis on the symptoms, lesions and treatment of diseases. The material in the advanced pathology and treatment of diseases of domestic animals is organized in a manner so that the students are introduced to symptoms and lesions of diseases and their relevance to diagnosis, chemotherapeutic and Prophylactic measures.

Different tables on symptoms and lesions of animal diseases, veterinary drugs and vaccination schedules have been incorporated in the book for quick diagnosis, treatment on time and prophylactic steps against such diseases. Molecular imaging is an important adjunct to today's pathology and medicine helping the detection of disease processes much earlier with information on the origins of disease related pathways, targets and adoption of proper methods for treatment and management of the root cause of diseases. It, thus, revolutionises the usual practice of treatment through symptoms by adopting technology driven techniques like PET, CT, SPECT, ultrasound, MRI and optical imaging etc. in patients.

My indebtedness lies to various scholars and pathologists whose views have been included in this book. I am grateful to Dr. P.B. Kupuswamy, former Principal, Bihar Veterinary College, Patna for help and encouragement in writing this book. I lay no claim to any originalities and welcome suggestions from users to improve its qualities. I wish to thank Dr. S.P.Verma, Principal BVC, Patna. Bihar, Dr. S.R.P Sinha, University Professor, B.V.C Patna and Dr. S.V Singh College of veterinary science, NDUAT, Kumar Ganj, Faizabad, U.P in preparing the manuscript of the book. My thanks are also due to *Somya Raj*, Shalini Raj, K-3, P.C. Colony, Kankarbagh, Patna, *Neha*, West Ashok Nagar Road No-1, Kankarbagh Patna-20 and *Amit kumar*, R.M.S Colony, Kankarbagh, Patna-20 for its meticulous composing. Pathology, an observational science, is combined with a live demanding subject of medicine for making this book as stimulating and exciting for the veterinarians.

C.D.N.Singh

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## Chapter 1 Diseases

These are reactions to injurious agents in the bodies of man and animals. Various diseases are caused by different animate factors like bacteria, viruses, fungi and protozoa etc. The pathogens (microbes) exist in the bodies of susceptible animals solely as obligate parasites. The existence of the organisms for a short period outside the body of animals is noticed in some cases as seen in *Mycobacterium tuberculosis* infection. Both saprophytic and parasitic existence can be noticed in certain bacteria e.g., *Erysipelothrix rhusiopathiae* in pigs. Saprophytes are such bacteria, which can live upon dead organic material of both the plant and animal origins. Infection (from the Latin *inficere*) is that condition in which living agents enter the animal body and a disturbance of function, with or without tissue abnormalities, in any part is set up. A disturbance of function is recognized in the form of symptoms. Facultative pathogens are those organisms which are capable to produce diseases in the state of lowered vitality. The organisms existing on the external surfaces of the body and in the mouth, anus, vagina etc., in usually harmless state are called commensals. An infectious disease results from presence of living organisms in or on the animals' body with the capability to produce a state of disturbed functions (i.e., symptoms). When an infectious disease spreads from one individual to another by direct or indirect contact, it is said to be a contagious disease. All contagious diseases are said to be infectious, but at the same time, all infectious diseases are not considered to be contagious. Some infections may be highly contagious, others may be slightly contagious and a few others may not be at all contagious. The facultative pathogenic bacteria behave as secondary

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