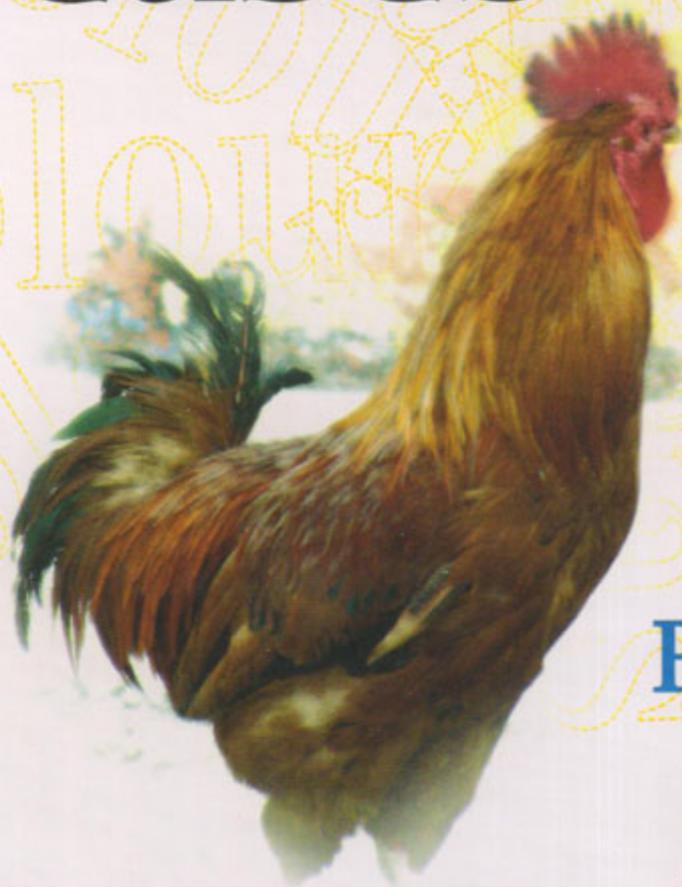


A Colour Atlas of Poultry Diseases



**An Aid
for
Farmers
and
Poultry
Professionals**

J.L. VEGAD



CBS Publishers & Distributors Pvt Ltd

A COLOUR ATLAS OF POULTRY DISEASES

An Aid to Farmers and Poultry Professionals

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FOREWORD

Dr. J. L. Vegad has once again contributed in a very significant manner to poultry farmers. In practical poultry keeping our belief is that laboratory diagnosis should always be correlated with field conditions and field diagnosis, before embarking on protective and curative measures. Many times we find that laboratory diagnosis indicates a disease which is not the disease of the flock but the disease of an individual bird. For proper diagnosis and treatment visit to the farm, watching the flock and on-the-spot postmortem is the useful tool.

The Colour Atlas will be of tremendous help to the farmers and field diagnosticians.

Dr. Vegad has once again shown his insight into practical aspect of poultry keeping and this publication will be of tremendous value. I am sure the industry will receive this with open arms.

V. N. Dubey
Chairman,
Phoenix Group,
Jabalpur

PREFACE

This is the first ever such atlas to be produced for Indian farmers and poultry professionals. Its objective is to provide a handy tool to farmers for on-the-spot diagnosis of diseases, under field conditions.

Although a large number of laboratory tests, some sophisticated like ELISA and PCR, have been developed for the diagnosis of poultry diseases, they are either not available or are beyond the reach of most farmers. Moreover, by the time birds reach laboratory, they are mostly decomposed and unfit for postmortem examination and disease diagnosis. The delay in diagnosis allows the disease to inflict mortality and ruin farmer's economy. **The key to disease control then is on-the-spot diagnosis.** It is with this objective that the colour atlas has been produced - to make readily available to poultry farmers a handy tool for immediate and accurate disease diagnosis **under field conditions.**

A large number of poultry diseases, including the more deadly like Ranikhet and Gumboro, leave their footprints in the dead bird. From these characteristic postmortem findings, it is possible to arrive at a correct diagnosis. **The atlas provides 150 coloured photographs and covers a wide spectrum of poultry diseases.** For important diseases, several photographs are given so that at no stage their diagnosis is missed. Also, wherever considered appropriate, pictures of live birds showing symptoms of specific diseases are given. In addition, each disease is accompanied by a brief description that highlights its salient features **and also records author's field observations.**

As this book is intended exclusively for disease diagnosis, it should be read alongside author's another book - **"Poultry diseases -A guide for farmers & poultry professionals (2004) by J. L. Vegad"**- to obtain information on other aspects of poultry diseases, namely, cause, transmission, symptoms, diagnosis, treatment, and control.

Although the book is written to meet requirements of poultry farmers, it will be equally useful to poultry consultants, diagnostic laboratories, and will acquaint the veterinary students with poultry diseases under field conditions.

I am grateful to Shri V.N. Dubey, Chairman, Phoenix Group, Jabalpur for writing the 'FOREWORD'. I sincerely thank my colleagues in the Phoenix Group Dr. P. S. Atkare, Shri S.G. Atkare, Shri S. K. Gorasia, Dr. P. K. Tiwari, and Dr. Priti Mishra for their help and support. I express my great appreciation to Dr. Madhu Swamy, Associate Professor of Pathology, for going through the manuscript. I thank Shri Ganga Ram Choudhary and Shri Gajendra Rajput of the Phoenix Lab for their assistance.

I am thankful to Shri Suneel Gomber, Manager, International Book Distributing Co., Lucknow, for publication of the Atlas.

My nephew, Shri Neeraj Vegad, was not only magnanimous in lending me his camera, but was also most helpful in the photographic work. Shri Anand Parmar and Shri Vijay Parmar of Jabalpur Graphics were most generous in the scanning of photographs and other computer work. Finally, I like to express my profound appreciation to my wife Nita for her patience, and for her faith in me and my task.

I do hope the Atlas proves useful to all sections of the poultry industry for the purpose for which it is intended.

J.L. Vegad

CONTENTS

1. Viral Diseases	1
2. Bacterial Diseases	33
3. Mycoplasmal Diseases	62
4. Fungal Diseases	65
5. Parasitic Diseases	74
6. Nutritional Diseases	85
7. Metabolic Diseases	89
8. Miscellaneous Diseases/Conditions	106
INDEX	120

1

VIRAL DISEASES

RANIKHET DISEASE (Newcastle Disease)

Ranikhet disease (RD) is the most common, the most widely prevalent, and economically the most important viral disease of poultry in our country. It is a very severe, sudden, and rapidly spreading disease; and may be seen from 6th to 7th day onward up to 72 weeks. It occurs throughout the year, but is most common in the summer.

Cause

A virus called **paramyxovirus**. These **viruses are of different types**. Some are highly powerful and cause most severe form of the disease, others are moderate, while a certain group is only mildly harmful. In addition, there are some viruses that cause infection without showing any symptoms.

Spread

1. **Virus spreads through the air.**
2. Infection occurs mainly through **inhalation** or **ingestion**.
3. Contaminated feed and water spread infection.
4. Movements of people and equipment also spread infection.
5. Away from the bird, that is, in the shed, virus survives for days to weeks.

However, in the dead bird or faeces, virus survives for several months.

Symptoms

Depending on the disease-producing power of the virus, symptoms vary.

1. With **very harmful viruses**, first indication is sudden death. Then, symptoms such as depression, weakness, lying down, green diarrhoea, swelling of the face, and nervous signs may appear, ending in exhaustion and death (Fig. 1). Other signs include twisting of the neck, paralysis of legs and arched position of the body. Mortality may occur up to 100% in chicks. In layers, early symptom is shell-less or soft-shelled eggs, followed by complete stoppage of laying.
2. **Moderately harmful viruses** usually cause severe respiratory disease and respiratory symptoms. In adult birds there is marked drop in egg production for several months. Mortality is low.
3. **Mildly harmful viruses** may cause no disease, or only a mild respiratory distress.

Postmortem Findings

1. **Pinpoint haemorrhages on the tips of glands in the proventriculus** (Fig. 2, 3).
2. Enlarged and haemorrhagic caecal tonsils.
3. Haemorrhagic lesions in the intestinal wall (in the lymphoid aggregates) (Fig. 4, 5, 6, 7, 8).
4. Spleen shows necrosis (white spots of dead tissue) on its outer surface, and also on the cut surface.
5. Marked congestion of trachea, often with haemorrhages. The airsacs may be inflamed (airsacculitis) and appear cloudy and congested. Airsacs may even contain cheesy (caseous) material.

Diagnosis

1. From the characteristic postmortem findings.
2. Confirmation depends on various laboratory tests, such as HI and ELISA, and also on isolation of the virus and its characterization.

Treatment

There is no treatment.

Control

1. Timely vaccination with live and/or inactivated (killed) vaccine is the only reliable control method.
2. However, under field conditions vaccination alone is not sufficient to control RD. It must therefore be accompanied by good hygiene, good management, and good biosecurity practices.



Fig. 1. **Ranikhet disease** in a **12-week-old grower chicken**. Note the bird is depressed, its eyes are closed and the head is drooping.

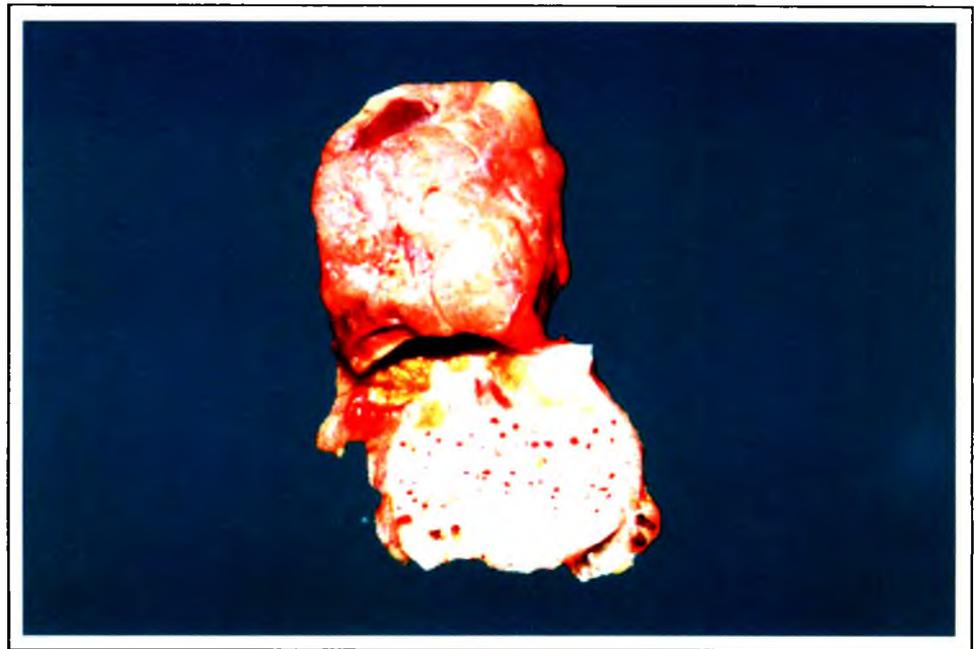


Fig.2. **Ranikhet disease** in a **45-day-old broiler chicken**. Note the presence of haemorrhages on the tips of glands in the proventriculus. **This is diagnostic of Ranikhet disease.**

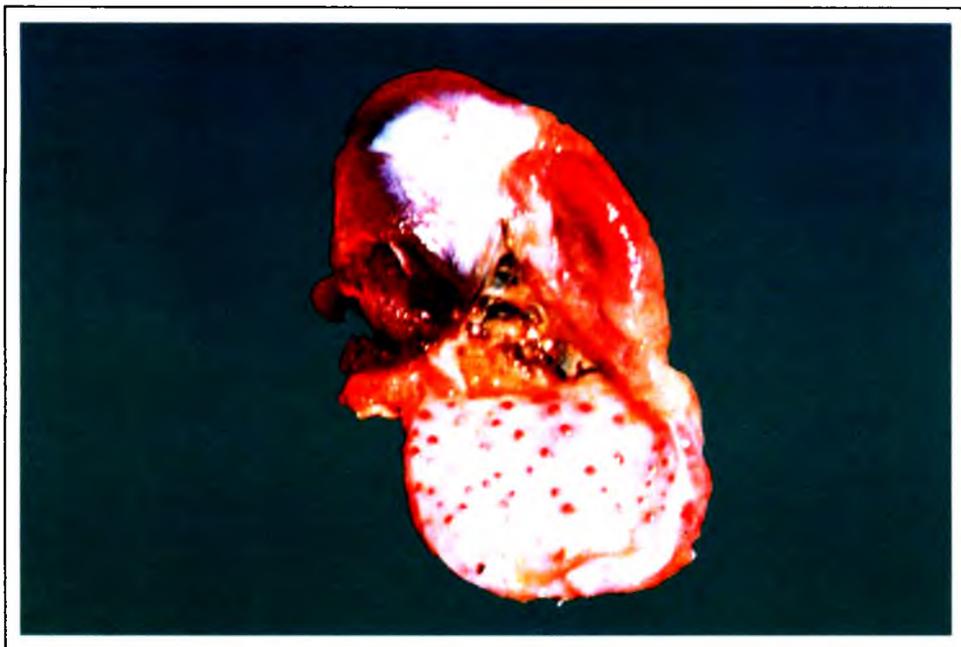


Fig. 3. **Ranikhet disease** in a **63-week-old layer chicken**. Note prominent haemorrhages on the tips of glands in the proventriculus.

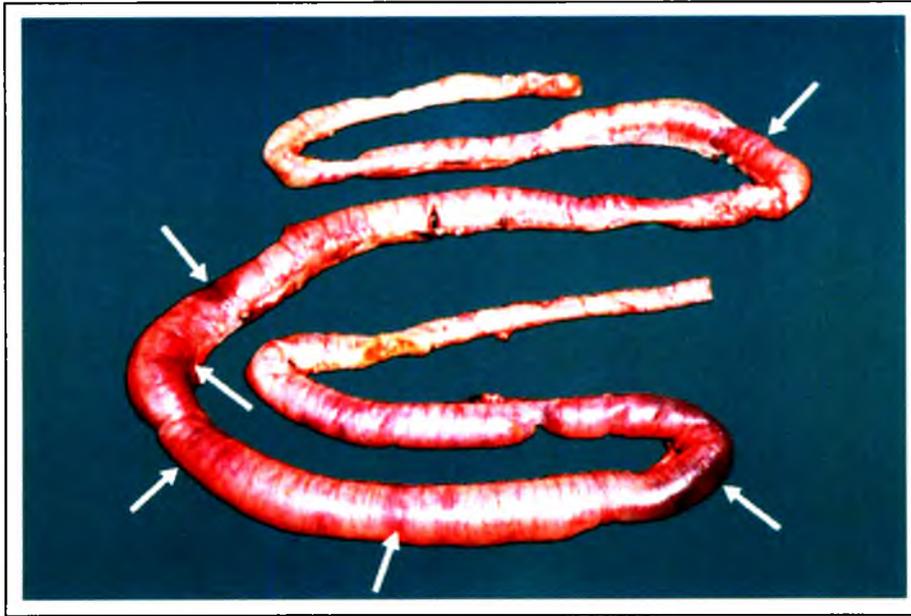


Fig. 4. **Highly powerful (virulent) form of Ranikhet disease (intestinal form) in a 36-day-old broiler chicken.** Note prominent haemorrhagic lesions (changes) in the small intestine (white arrows). **This is typical of the virulent form of Ranikhet disease.**

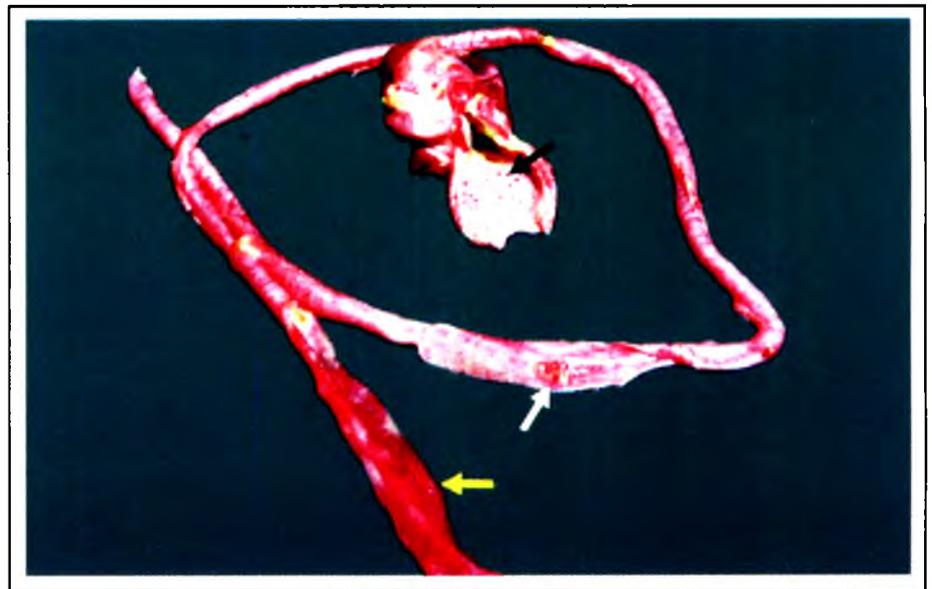
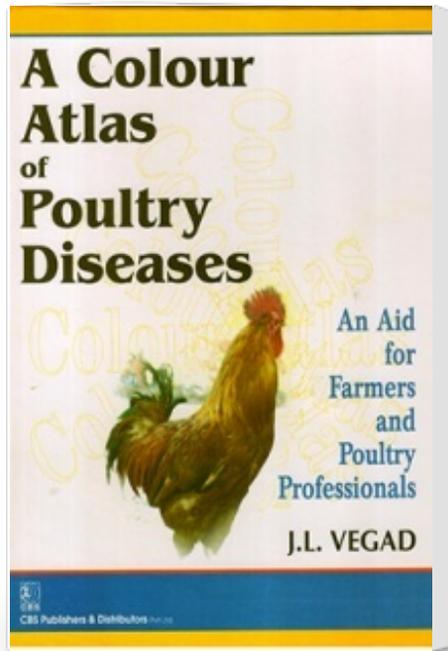


Fig. 5. **Highly powerful (virulent) form of Ranikhet disease (intestinal form) from the same 36-day-old broiler chicken shown in Fig. 4.** Note pinpoint haemorrhages in the proventriculus (black arrow); and one well-defined almost circular haemorrhagic lesion (white arrow) and other diffuse haemorrhages (yellow arrow) in the small intestine. **These lesions are characteristic of highly powerful disease-producing Ranikhet disease viruses (viscerotropic velogenic).**

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