

11TH Edition

DISEASES OF POULTRY

Editor-in-Chief

Y.M. Saif

Associate Editors

H.J. Barnes

J.R. Glisson

A.M. Fadly

L.R. McDougald

D.E. Swayne

Contents

Contributing Authors	ix		
Introduction	xvii		
1 Principles of Disease Prevention: Diagnosis and Control	3		
Introduction, <i>A.J. Bermudez</i>	3		
The Avian Immune System, <i>J.M. Sharma</i>	5		
Disease Prevention and Diagnosis, <i>A.J. Bermudez and B. Stewart-Brown</i>	17		
Antimicrobial Therapy, <i>D.P. Wages</i>	55		
Section I VIRAL DISEASES			
2 Newcastle Disease, Other Avian Paramyxoviruses, and Pneumovirus Infections	63		
Introduction, <i>D.J. Alexander</i>	63		
Newcastle Disease, <i>D.J. Alexander</i>	64		
Avian Paramyxoviruses 2-9, <i>D.J. Alexander</i>	88		
Avian Pneumoviruses, <i>R.E. Gough</i>	92		
3 Infectious Bronchitis	101		
<i>D. Cavanagh and S.A. Naqi</i>			
4 Laryngotracheitis	121		
<i>J.S. Guy and T.J. Bagust</i>			
5 Influenza	135		
<i>D.E. Swayne and D.A. Halvorson</i>			
6 Infectious Bursal Disease	161		
<i>P.D. Lukert and Y.M. Saif</i>			
7 Circovirus Infections	181		
Introduction, <i>K.A. Schat</i>	181		
Chicken Infectious Anemia, <i>K.A. Schat</i>	182		
		Circovirus Infections of Pigeons and Other Avian Species, <i>L.W. Woods and K.S. Latimer</i>	202
		8 Adenovirus Infections	213
		Introduction, <i>J.B. McFerran</i>	213
		Group I Adenovirus Infections, <i>J.B. McFerran and B.M. Adair</i>	214
		Egg Drop Syndrome, <i>J.B. McFerran and B.M. Adair</i>	227
		Hemorrhagic Enteritis and Related Infections, <i>F.W. Pierson and S.D. Fitzgerald</i>	237
		Quail Bronchitis, <i>W.M. Reed and S.W. Jack</i>	248
		9 Pox	253
		<i>D.N. Tripathy and W.M. Reed</i>	
		10 Avian Encephalomyelitis	271
		<i>B.W. Calnek</i>	
		11 Reovirus Infections	283
		Introduction, <i>J.K. Rosenberger</i>	283
		Viral Arthritis, <i>J.K. Rosenberger</i>	284
		Other Reovirus Infections, <i>R.C. Jones</i>	293
		12 Viral Enteric Infections	299
		Introduction, <i>Y.M. Saif</i>	299
		Turkey Coronavirus Enteritis, <i>J.S. Guy</i>	300
		Rotavirus Infections, <i>M.S. McNulty</i>	308
		Astrovirus Infections, <i>D.L. Reynolds and S.L. Schultz-Cherry</i>	320
		Avian Enteroviruslike Viruses, <i>M.S. McNulty and J.S. Guy</i>	326
		Turkey Torovirus Infection, <i>A. Ali and D.L. Reynolds</i>	332

13 Viral Infections of Waterfowl	339	19 Pasteurella and Other Related Bacterial Infections	657
Introduction, <i>P.R. Woolcock</i>	339	Introduction, <i>J.R. Glisson</i>	657
Duck Hepatitis, <i>P.R. Woolcock</i>	343	Fowl Cholera, <i>J.R. Glisson, C.L. Hofacre</i>	
Duck Virus Enteritis (Duck Plague), <i>T.S. Sandhu and S.A. Shawky</i>	354	and <i>J.P. Christensen</i>	658
Hemorrhagic Nephritis Enteritis of Geese, <i>J-L. Guérin</i>	363	<i>Riemerella anatipestifer</i> Infection, <i>T.S. Sandhu</i>	676
Goose Parvovirus Infection, <i>R.E. Gough</i>	367	<i>Ornithobacterium rhinotracheale</i> Infection, <i>R.P. Chin, P.C.M. van Empel, and H.M. Hafez</i>	683
14 Other Viral Infections	375	20 Infectious Coryza	691
Introduction, <i>Y.M. Saif</i>	375	<i>P.J. Blackall and M. Matsumoto</i>	
Miscellaneous Herpesvirus Infections, <i>H. Vindevogel and J.P. Duchatel</i>	375	21 Bordetellosis (Turkey Coryza)	705
Avian Nephritis, <i>T. Imada and H. Kawamura</i>	379	<i>M.W. Jackwood and Y.M. Saif</i>	
Viral Proventriculitis, <i>M.A. Goodwin</i> and <i>S. Hafner</i>	383	22 Mycoplasmosis	719
Arbovirus Infections, <i>J.S. Guy and M. Malkinson</i>	388	Introduction, <i>S.H. Kleven</i>	719
Turkey Viral Hepatitis, <i>J.S. Guy</i>	399	<i>Mycoplasma gallisepticum</i> Infection, <i>D.H. Ley</i>	722
15 Neoplastic Diseases	405	<i>Mycoplasma meleagridis</i> Infection, <i>R. P. Chin,</i> <i>G.Y. Ghazikhanian, and I. Kempf</i>	744
Introduction, <i>A.M. Fadly</i>	405	<i>Mycoplasma synoviae</i> Infection, <i>S.H. Kleven</i>	756
Marek's Disease, <i>R.L. Witter and K.A. Schat</i>	407	<i>Mycoplasma iowae</i> Infection, <i>J.M. Bradbury</i> and <i>S.H. Kleven</i>	766
Leukosis/Sarcoma Group, <i>A.M. Fadly and</i> <i>L.N. Payne</i>	465	Other Mycoplasmal Infections, <i>S.H. Kleven</i>	772
Reticuloendotheliosis, <i>R.L. Witter and A.M. Fadly</i>	517	23 Clostridial Diseases	775
Dermal Squamous Cell Carcinoma, <i>S. Hafner</i> and <i>M.A. Goodwin</i>	536	Introduction, <i>H.J. Barnes</i>	775
Multicentric Histiocytosis, <i>S. Hafner</i> and <i>M.A. Goodwin</i>	539	Ulcerative Enteritis (Quail Disease), <i>D.P. Wages</i>	776
Other Tumors of Unknown Etiology, <i>R.L. Reece</i>	541	Necrotic Enteritis, <i>D.P. Wages and K. Opengart</i>	781
		Botulism, <i>J.E. Dohms</i>	785
		Gangrenous Dermatitis, <i>D.P. Wages</i> and <i>K. Opengart</i>	791
Section II BACTERIAL DISEASES		24 Other Bacterial Diseases	797
16 Salmonella Infections	567	Introduction, <i>H.J. Barnes</i>	797
Introduction, <i>R.K. Gast</i>	567	Staphylococcosis, <i>C.B. Andreasen</i>	798
Pullorum Disease and Fowl Typhoid, <i>H.L. Shivaprasad</i>	568	Streptococcosis, <i>D.P. Wages</i>	805
Paratyphoid Infections, <i>R.K. Gast</i>	583	Enterococcosis, <i>D.P. Wages</i>	809
17 Campylobacter Infection	615	Erysipelas, <i>J.M. Bricker and Y.M. Saif</i>	812
<i>S.M. Shane and N.J. Stern</i>		Avian Intestinal Spirochetosis, <i>D.E. Swayne</i>	826
18 Colibacillosis	631	Tuberculosis, <i>R.M. Fulton and C.O. Thoen</i>	836
<i>H.J. Barnes, J-P. Vaillancourt, and W.B. Gross</i>		Miscellaneous and Sporadic Bacterial Infections, <i>H.J. Barnes</i>	845
		25 Avian Chlamydiosis (psittacosis, ornithosis)	863
		<i>A.A. Andersen and D. Vanrompay</i>	

Section III **FUNGAL DISEASES**

26 Fungal Infections	883
Introduction, <i>R.A. Kunkle</i>	883
Aspergillosis, <i>R.A. Kunkle</i>	883
Sporadic Fungal Infections, <i>R.A. Kunkle</i>	896

Section IV **PARASITIC DISEASES**

27 External Parasites and Poultry Pests	905
Introduction, <i>J.J. Arends</i>	905
Insects, <i>J.J. Arends</i>	908
Rodents, <i>J.J. Arends</i>	927
28 Internal Parasites	931
Introduction, <i>L.R. McDougald</i>	931
Nematodes and Acanthocephalans, <i>R.A. Norton and M.D. Ruff</i>	931
Cestodes and Trematodes, <i>L.R. McDougald</i>	961
29 Protozoal Infections	973
Introduction, <i>L.R. McDougald</i>	973
Coccidiosis, <i>L.R. McDougald</i>	974
Cryptosporidiosis, <i>L.R. McDougald</i>	991
<i>Cochlosoma anatis</i> Infection, <i>A.J. Bermudez</i>	996
Other Protozoan Diseases of the Intestinal Tract, <i>L.R. McDougald</i>	1001
Miscellaneous and Sporadic Protozoal Infections, <i>A.J. Bermudez</i>	1010

Section V **NONINFECTIOUS DISEASES**

30 Nutritional Diseases	1027
<i>K.C. Klasing and R.E. Austic</i>	
31 Developmental, Metabolic, and Other Noninfectious Disorders	1055
<i>R. Crespo and H.L. Shivaprasad</i>	
32 Mycotoxicoses	1103
<i>F.J. Hoerr</i>	
33 Other Toxins and Poisons	1133
<i>T.P. Brown and R.J. Julian</i>	

Section VI **OTHER DISEASES**

34 Emerging Diseases and Diseases of Complex or Unknown Etiology	1163
Introduction, <i>Y.M. Saif</i>	1163
Multicausal Respiratory Diseases, <i>S.H. Kleven</i>	1164
Multicausal Enteric Diseases, <i>D.L. Reynolds</i>	1169
Poult Enteritis-Mortality Syndrome, <i>H.J. Barnes and J.S. Guy</i>	1171
Hypoglycemia-Spiking Mortality Syndrome of Broiler Chickens, <i>J.F. Davis</i>	1181
Big Liver and Spleen Disease, <i>C.J. Payne</i>	1183
Index	1187