

# *Avian Diseases*

An international journal dedicated to avian health

**EDITOR**

Jagdev M. Sharma  
College of Veterinary Medicine  
University of Minnesota  
St. Paul, Minnesota 55108

**BUSINESS MANAGER**

Charles L. Hofacre  
University of Georgia  
953 College Station Road  
Athens, Georgia 30602-4875

**EDITORIAL BOARD**

A. J. Bermudez  
C. J. Cardona  
H. D. Chapman  
R. P. Chin  
S. Davison  
A. M. Fadly  
S. D. Fitzgerald  
O. J. Fletcher  
R. K. Gast  
J. S. Guy  
M. Hess  
K. Hiett  
F. J. Hoerr  
D. J. Jackwood  
M. W. Jackwood  
D. R. Kapczynski  
D. J. King  
S. H. Kleven  
M. Lee  
H. S. Lillehoj  
J. Maurer  
L. R. McDougald  
T. Morishita  
L. Nolan  
M. S. Parcells  
S. Rautenschlein  
S. Reddy  
D. L. Reynolds  
Y. M. Saif  
K. A. Schat  
B. Seal  
H. L. Shivaprasad  
R. F. Silva  
R. Singer  
E. Spackman  
D. L. Suarez  
D. E. Swayne  
P. S. Wakenell  
P. Wigley  
P. R. Woolcock  
C. C. Wu

Published Quarterly by  
the American Association of Avian Pathologists



Vol. 51 No. 2

June 2007

Pages 515–648

# Avian Diseases

Vol. 51, No. 2

June 2007

## Table of Contents

### *Invited Review—*

- Molecular Detection and Differentiation of Infectious Bursal Disease Virus. Ching Ching Wu, Peter Rubinelli, and Tsang Long Lin ..... 515

### *Regular Articles—*

- Molecular and Serologic Characterization, Pathogenicity, and Protection Studies with Infectious Bronchitis Virus Field Isolates from California. Mark W. Jackwood, Deborah A. Hilt, Susan M. Williams, Peter Woolcock, Carol Cardona, and Robert O'Connor ..... 527
- Investigations of the Occurrence of *Avibacterium paragallinarum* Infections in Uganda. D. K. Byarugaba, U. M. Minga, P. S. Gwakisa, E. Katunguka-Rwakishaya, M. Bisgaard, and J. E. Olsen ..... 534
- Development of One-Step Reverse Transcriptase-Polymerase Chain Reaction to Detect Duck Hepatitis Virus Type 1. Min-Chul Kim, Yong-Kuk Kwon, Seong-Joon Joh, Jun-Hun Kwon, Jae-Hong Kim, and Sun-Joong Kim ..... 540
- Preliminary Study on Duck Enteritis Virus-Induced Lymphocyte Apoptosis *In Vivo*. Yuan Guiping, Cheng Anchun, Wang Mingshu, Han Xiaoying, Zhou Yi, and Liu Fei ..... 546
- Safety and Efficacy of the *Mycoplasma synoviae* MS-H Vaccine in Turkeys. Amir H. Noormohammadi, Farhid Hemmatzadeh, and Kevin G. Whithear ..... 550
- The *Mycoplasma gallisepticum* 16S–23S rRNA Intergenic Spacer Region Sequence as a Novel Tool for Epizootiological Studies. Ziv Raviv, S. Callison, N. Ferguson-Noel, V. Laibinis, R. Wooten, and S. H. Kleven ..... 555
- Chicken Gallinacin Gene Cluster Associated with *Salmonella* Response in Advanced Intercross Line. J. R. Hasenstein and S. J. Lamont ..... 561
- Characterization of H5N1 Influenza Viruses Isolated from Migratory Birds in Qinghai Province of China in 2006. Fumin Lei, Shuang Tang, Delong Zhao, Xiaowei Zhang, Zheng Kou, Yongdong Li, Zhong Zhang, Zuohua Yin, Shengliang Chen, Sandan Li, Dehai Zhang, Baoping Yan, and Tianxian Li ..... 568
- DNA Vaccination of the American Crow (*Corvus brachyrhynchos*) Provides Partial Protection Against Lethal Challenge with West Nile Virus. Michel L. Bunning, Patricia E. Fox, Richard A. Bowen, Nicholas Komar, Gwong-Jen J. Chang, Tully J. Speaker, Michael R. Stephens, Nicole Nemeth, Nicholas A. Panella, Stanley A. Langevin, Paul Gordy, Max Teehee, Patricia R. Bright, and Michael J. Turell ..... 573

### **About the cover**

Chris Jones, the artist featured on the cover, was born in Dorset, England and studied natural history illustration at Bournemouth & Poole College of Art and Design. He works almost exclusively in oils and has won numerous awards for his work, including being named International Young Artist of the Year by the Society of All Artists in 1998. His work is regularly exhibited at the Society of Wildlife Artists at the Mall Galleries in London and has been shown at the “Birds in Art” exhibition in Wausau, Wisconsin, the BBC Wildlife Magazine, and Wildlife Art in the US. He specializes in poultry and exotic subjects, particularly rare and endangered species. The painting on the cover is entitled *Pekin Bantams*. Details of his current work and exhibitions are available on his website: [www.chrisjonesart.com](http://www.chrisjonesart.com). The artist currently lives in Wiltshire, England.