AMERICAN ASSOCIATION OF AVIAN PATHOLOGISTS

Robert J. Eckroade, Secretary-Treasurer of A.A.A.P.
University of Pennsylvania, New Bolton Center
Kennett Square, PA 19348-1692
(215) 444-4282

AAAP WINTER NEWSLETTER *JANUARY 1, 1994*

ENCLOSURES FOR YOUR REVIEW

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1994 AVMA-AAAP MEETING IN SAN FRANCISCO

The preliminary program for the Respiratory Diseases symposium and the preliminary AVMA-Avian Medicine Scientific program are enclosed. The scientific program begins with the Symposium and the poster paper session on Sunday, July 10 and the platform papers on Monday, July 11 and goes through Wednesday noon. Please note that there will be dual sessions this year. All of these session will be held in the Moscone Convention Center. The Board meetings, AAAP committee meetings and the awards luncheon will be held in the ANA Hotel.

*Our **AWARDS LUNCHEON** will be held on Monday, July 11 from noon to 2 in the ANA Hotel. Luncheon tickets must be purchased from this office prior to the meeting. A special mailing will be done in May to remind you.*

The AAAP Board of Directors will meet all day Friday, July 8 and Saturday, July 9 and again Wednesday morning. Any member having business to bring to the Board is welcome. Those members having special issues needing more time might consider contacting the Business Office by April 1, 1994 to schedule the issue on the agenda.

SAN FRANCISCO HOTEL RESERVATIONS

We have selected the ANA Hotel for the AAAP headquarters. The ANA Hotel is only one block from the convention center and has one of the least expensive double room rates for the convention. Therefore it will fill up quickly. SO ---- if you want a room there, reserve it TODAY -- The housing form is attached. Dr. Rosenwald has done a personal inspection of this hotel and with others considers it the best place for us in San Francisco.

DRAFT PROGRAM FOR 1994 AAAP-AVMA MEETING

*We, the Program Committee, are sharing with you this draft of the 1994 program. We have not had time to communicate with those who submitted requests for oral and/or poster presentations. Please note: **THIS IS A DRAFT PROGRAM AND IS SUBJECT TO CHANGE.***

We appreciate your interest in the 1994 program. Best wishes for 1994.

***Continuing Education credits** are available for those attending the scientific program. If you wish to obtain these credits, you **must** see Dr. Eckroade at the meeting and give him a business card. Please do not call later and ask me to remember you were there.*

AVMA MEETING RESERVATION FORMS

*AVMA meeting registration forms are automatically mailed to all AVMA members in good standing and program participants. **ASSOCIATE MEMBERS OF AAAP AND NON AVMA MEMBERS SHOULD WRITE TO MR. SCHLAX TO OBTAIN REGISTRATION FORMS.***

Mr. Robert Schlax
Convention Manager
AVMA
1931 North Meacham Road
Suite 100
Schaumburg, IL 60173

AWARDS NOMINATIONS

Please remember to submit nominations for AAAP awards. Nominations are due by April 15, 1994. Details of each award and the nomination procedures are enclosed. We need your help to select deserving candidates.

OBITUARIES

Dr. Raymond Bankowski, *professor emeritus of the School of Veterinary Medicine at the University of California, Davis, passed away on November 3, 1993, at age 79 after a prolonged respiratory illness. He is survived by his wife of 53 years Lucille, daughters Susan Irene of Davis and Linda Bankowski of Riverside, sisters Irene Czajkowski of Coloma, Michigan, and Lorraine Dombrowski of Dearborn, michigan, and two nieces and two nephews. He was born in Chicago, Illinois, on February 4, 1914, and had been a resident of Davis, California, since 1950.*

Dr. Bankowski received the DVM degree from Michigan State University in 1938 and then entered postgraduate studies in the Veterinary Science Division of the University of California, Berkeley. He served in the U.S. army veterinary corps in World War II with the 4th medical laboratory in North Africa and Europe and ended his military career in the army reserves with the rank of colonel. He completed his PhD degree in comparative pathology in 1946. In 1950, he went to the University of California, Davis, where he was a founding faculty member of the School of Veterinary Medicine and served as chair of the Department of Avian Medicine from 1954 to 1959.

He was actively involved in teaching veterinary students in his early years at Davis and later primarily taught graduate students. His active research program was a sought after training ground for graduate students from many countries, including five from Japan; many of these students became lifelong friends and colleagues. His research focused on the study of infectious viral diseases of animals and their control, and he published 160 scientific papers, plus chapters in textbooks and other writings. He retired from the University in 1978, but, as an emeritus faculty member, maintained an active research program and was a major contributor to the establishment of the school's clinical residency training program in avian medicine.

Dr. Bankowski was committed to community and public service. He was a member of the Davis Rotary Club and past president of the Davis Faculty Club. He served on technical advisory committees to the U.S. Department of Agriculture for the control and eradication of foreign poultry disease outbreaks in the United States, including exotic Newcastle disease in California in 1971 and avian influenza in Pennsylvania, New Jersey and Maryland in 1983. He chaired the Committee on Transmissible Disease of Poultry and Other Avian Species of the U.S. Animal Health Association from 1973 to 1987 and served as general chairman of the First International Symposium on Avian Influenza in 1981. He was a founder of the American Association of Avian Pathologists, a charter diplomate and chairman of the Board of Governors of the American College of Veterinary Microbiologists, and a fellow of the American Academy of Microbiology.

He served as a member of the National Institutes of Health Study Section on Virology and Rickettsiology and the World Health

Organization Committee on Animal Virus Classification and traveled to many countries as a scientific advisor. He was active in the American Veterinary Medical Association and the California Veterinary Medical Association and maintained a close relationship with the animal industries with which he worked.

He received many honors for his research and service, including a Fulbright Award in 1957 for study in England; the Mark Morris Animal Foundation Research Director Award in 1961; the AVMA Research Award in 1971; the American Feed Manufacturers Association Award in 1971; the Michigan State University Veterinary Alumni Award in 1974; the Karl F. Meyer Gold-Headed cane Award and Honorary Diploma from the American Association of Veterinary Laboratory Diagnosticians in 1985; and the Western Poultry Disease conference Achievement Award in 1992.

☹☹☹☹☹

The obituary for Dr. Ernest Milton Dickinson incorrectly stated that he returned to Ohio State University in 1938 as an Associate Professor of Veterinary Medicine. It should have stated that he returned to Oregon State University.

FOR YOUR INFORMATION

CHANGES TO THE CONSTITUTION AND BY-LAWS

The votes are in and all of the proposed changes to the Constitutions and By-Laws are approved.

TOXIC, INFECTIOUS AND MISCELLANEOUS DISEASES COMMITTEE SURVEY

Recently a survey was sent to the members of the Toxic, Infectious and Miscellaneous Diseases Committee. This was stimulated by Dave Halvorson's letter requesting input from AAAP committees. I have compiled the results of what our committee members believe should be areas of concern for our committee, other AAAP committees and the AAAP Board.

1. *Broad Impact Issues*
   a. *Mycotoxins--diagnosis, detection, prevention, control*
   b. *Chick anemia agent*
   c. *"spiking mortality"*
   d. *Limited availability of drugs to treat poultry diseases-- pharmaceutical firms should be encouraged to speed up the development of therapeutic agents*
   e. *Immunosuppressive agents*
   f. *Disease problems of ratites and their impact on commercial poultry production*
   g. *Ascites and leg problems*
2. *Issues to Discuss with Broiler, Layer, and Turkey Veterinarians' Assoc.*
   a. *Research and industry experiences with chick anemia agent*
   b. *Ascarids in poultry, particularly turkeys*
   c. *Liver spots in turkeys*
   d. *Updates on fumonisin mycotoxin--toxic dose, signs, any field problems in poultry*
   e. *Identify the most common natural toxicants of poultry*
3. *Items to Coordinate with Other AAAP Committees*
   a. *Poultry Welfare--issues of catching, transporting, and processing line. Also what are public perceptions of poultry welfare*

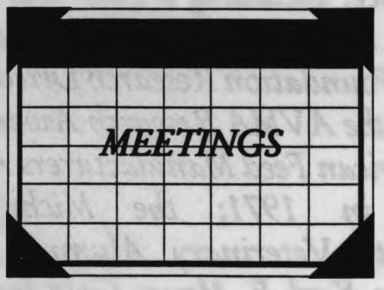
b. *Fenbendazole needs to be cleared for chickens and turkeys*
c. *Encourage development of diagnostic test reagents, particularly for mycoplasmas*
d. *Proventriculitis--etiology and treatment*
e. *Use of biotech to improve diagnosis of toxins*
f. *Recognize importance of ratite industry and present this subject matter on program at annual meeting*

4. *Impact of Committee on General Issues--Quality of Diagnosis in State Diagnostic Labs, Residue Prevention, Disease Prevention*
   a. *Need reference antisera and antigens available*
   b. *Levels of various toxicants that cause clinical disease in poultry*
   c. *Recommend that monoclonal antibodies for avian pathogens available from research laboratories for use in diagnostic labs*
   d. *Committee should review, rate efficacy and recommend usage of various diagnostic test, kits, antigens, antibodies, etc for diagnostic labs*

As I mentioned, these are areas of concern expressed by our committee. If you have any updated information about progress or new developments in these areas, please contact me.

RESEARCH GRANTS AVAILABLE

The Association of Avian Veterinarians Research Grants Available. Preproposals for research projects addressing clinical aspects of exotic and wild birds are now being accepted for consideration for funding by the Association of Avian Veterinarians. Grants are limited to $20,000 for an individual project. Application forms for preproposals are available from Adina Rae Freedman, AAV Central Office, PO Box 811720, Boca Raton, FL 33481. Completed preproposals must be received by January 17, 1994. Final proposals, upon invitation, must be received by May 15, 1994. Grants will be Awarded at the AAV Annual Conference in Reno, Nevada in September 1994.



***43RD WESTERN POULTRY DISEASE CONFERENCE** - To be held at the Capitol Plaza Holiday Inn in Sacramento, CA on February 27 - March 1, 1994. If you are requesting more information of a general nature or need registration instructions, please contact the Conference Services Office, University of California, Davis, California 95616-8766. Telephone inquiries should be directed to (916) 757-3331 and fax inquiries should be sent to (916) 757-7943. For special program information contact Dr. Rosenwald (916) 752-7258 or Dr. Medina (209) 668-6679.*

***15TH ANNUAL CONFERENCE OF THE MID-ATLANTIC STATES ASSOCIATION OF AVIAN VETERINARIANS** - To be held at Bally's Park Place in Atlantic City, NJ on April 24-26, 1994. Twenty seven contact hours of continuing education credit are available for veterinarians, technicians or students in a wide range of avian subjects: case studies, canary medicine, psittacine pediatrics, ratite pediatrics and therapeutics, and waterfowl medicine. Lectures and hands-*

on laboratories in basic and advanced techniques, soft tissue surgery and hematology and cytology are scheduled. As always the intent is to provide a cost conscious continuing education opportunity. Registration forms will be mailed in February 1994. Contact MASAAV, Memorial Bldg. Suite 291, 610 North Main Street, Blacksburg, VA 24060 or call/fax 703-951-2559 for further information.

66TH NORTHEASTERN CONFERENCE ON AVIAN DISEASES (NECAD) ANNOUNCEMENT AND PRELIMINARY CALL FOR PAPERS** - To be held at the University College Conference Center, University of Maryland, College Park, Maryland on June 19, 20 and 21, 1994. Plans are underway for this year's annual NECAD with a focus on emergency diseases and food safety issues. NECAD is a cordial, vintage association of poultry veterinarians and microbiologists that has been the professional springboard for many young avian medical scientists and leaders in the USA and Canada. We are planning a repeat performance of NECAD's traditional program of excellent scientific presentations and lively enjoyable social events. **If you do not ordinarily receive NECAD announcements and calls for papers, but would like to be placed on our 1994 list, contact Dr. Ed Mallinson, 1994 NECAD Chairman, Veterinary Medical Center, University of Maryland, 8075 Greenmead Drive, College Park, MD 20742-3711. Phone 301-935-6083 (voice mail extension 114) or FAX 301-935-6079.

***FIRST INTERNATIONAL SYMPOSIUM ON THE ARTIFICIAL INSEMINATION OF POULTRY** - To be held in College Park, MD on June 19-22, 1994. The objectives of the symposium are to provide a comprehensive review of the current state and future directions of AI technology and to address common problems and answer frequently asked questions regarding breeding turkeys and chickens by AI. For further information contact, M.R. Bakst, Organizer, USDA-ARS, BARC-East, Beltsville, MD 20705. Phone 301-504-8795. Fax 301-504-8546.*

***15TH ANNUAL CONFERENCE OF THE ASSOCIATION OF AVIAN VETERINARIANS ANNOUNCEMENT AND CALL FOR PAPERS** - To be held in Reno, Nevada on September 27 - October 1, 1994. Special consideration will be given to papers addressing surgery, ratites, aviculture, pigeons, reports of original research, and case reports as well as topics for the technicians' portion of the conference. Material must be original and previously unpublished. The deadline for receipt of applications is March 1, 1994. The papers will be reviewed and the program selected by the conference committee in late March. In addition to its Annual Conference, AAV will offer a day-long comprehensive program on avian surgery on March 27, 1994 in Atlanta, Georgia. Of primary interest to veterinarians, the program will also be beneficial to animal health technicians and veterinary students. For further information and to request a Call for Papers application, contact the AAV Conference Office, 2121 S. Oneida St. Ste 325, Denver, CO 80224-2552. Phone (303) 756-8380; Fax (303) 759-8861.*

EDUCATIONAL OPPORTUNITIES

***RESIDENCY IN NON-DOMESTIC AVIAN MEDICINE** - The Department of Companion Animals and Special Species Medicine in the College of Veterinary*

Medicine at North Carolina State University announces a second two year residency position in non-domestic avian medicine, beginning July 1, 1994. The non-domestic avian medicine program at NCSU is designed to provide comprehensive training in clinical medicine and surgery of exotic and wild birds. The resident will work under the guidance of two clinical faculty members and another avian resident. During the program, development of clinical skills will be emphasized in all phases of diagnostic and therapeutic avian medicine, including surgery, anesthesia, radiology, clinical pathology, clinical pharmacology, and emergency medicine. The case load consists primarily of psitticines, but other birds seen include wild birds (raptors, passerines, columbiformes), waterfowl, gamebirds, ratites and zoological birds. The avian service sees both inpatients and outpatients within the Veterinary teaching Hospital and conducts field service visits to avicultural collections within the state.

The resident is expected to actively participate in teaching senior veterinary students who take the elective avian rotation, as well as assist in teaching sophomore and junior laboratories. During the program, the resident will design and conduct a clinical research project, and is expected to publish two papers in refereed journals. This program is designed to prepare the candidate for board certification in the American College of Veterinary Practitioners (Avian Specialty), and provide partial preparation for board certification in the College of Zoological Medicine (Avian Emphasis). There will be some opportunities to interact with faculty in the zoological medicine and poultry medicine programs at NCSU.

Selection of a suitable candidate will be done through the Intern/Residency Matching Program. The application consists of an application form, university transcripts, three letters of reference, a curriculum vitae, and a cover letter explaining your reasons for seeking this position and how you propose to use this training. All application materials must be in the Coordinator's office by January 3, 1994. For application information, please contact: Cynthia DeLuca, Coordinator, Intern/Residency Programs, College of Veterinary Medicine, North Carolina State University, 4700 Hillsborough St, Raleigh, NC 27606. Phone (919) 829-4262. For more specific information about the residency program, please contact: Dr. Keven Flammer, (919) 829-4353 or Dr. Laurel Degernes, (919) 821-9790.

***GRADUATE TRAINING POSITION IN POULTRY MEDICINE** - The Department of Avian and Aquatic Animal Medicine, College of Veterinary Medicine at Cornell University, offers a Research Assistantship to pursue research and advanced studies leading to a PhD degree. Opportunities for training are available in avian immunology, virology and viral pathogenesis at the molecular and animal levels. Preference will be given to applicants with a DVM degree and US citizenship or permanent residents of the US. Candidates with a BS degree and/or MS degree in molecular biology, virology or immunology are also encouraged to apply.*

The award includes an initial salary ranging from $19,292 to $24,076/year (depending on years of relevant experience) for candidates holding the DVM degree, and $13,475 for candidates with a BS and/or MS degree. Tuition (presently $9,550/year) also is provided. An award is contingent on acceptance of the student by the Cornell Graduate School.

The Department has excellent research facilities and resources available, including breeding flocks of specific-pathogen-free chickens of known major histocompatibility antigens, virus isolation units for experimental animals, and facilities for molecular biology studies. Successful applicants will be encouraged to rotate through two laboratories before naming their mentor.

For additional information or for a listing of departmental faculty and research programs, prospective applicants should contact: Dr. B.W. Calnek, Dept of Avian and Aquatic Animal Medicine, College of Veterinary Medicine, Cornell University, Ithaca, NY 14853-6401. Phone (607) 253-3364; Fax (607) 253-3369. There is no deadline for applications.

Cornell University is an affirmative action/equal opportunity educator and employer. Minority students are especially encouraged to apply.

POSITIONS WANTED

***Position Wanted** - Experienced poultry veterinarian with a solid background in turkeys, broilers and light and heavy layers. Seeking a position with a poultry integrator, university system, technical service and/or research with a pharmaceutical or biological company. I received my PhD from the University of Missouri in veterinary pathology with an emphasis on commercial poultry. For further information or a resume, please contact Dr. Ron Friedlander (501) 228-5612.*

AVAILABLE

The National Association of State Public Health Veterinarians, Inc. Compendium of Psittacosis Control, 1993 is available. Address all correspondence to Dr. F.T. Satalowich, Missouri Department of Health, PO Box 570, Jefferson City, MO 65102.

Wild Ones Animal Health Library Catalog for Wildlife Health Practitioners is available free of charge from Mike Cahill, PO Box 947, Springville, CA 93265. Phone 800-539-0210.

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Dr. Don Simmons
Dr. David Swayne
Tri Bio Laboratories
Dr. Louis van der Heide
Dr. Pedro Villegas
Dr. Donald W. Waldrip
Dr. Lloyd Weber
Dr. Richard Yamamoto

CONTRIBUTOR (LESS THAN $100)

Dr. James Bivins
Dr. Thomas Bryan
Dr. A.E. Castro
Dr. Richard Chin
Dr. Gregg Cutler
Dr. Jack Douglas
Dr. Joseph Giambrone
Dr. D.A. Halvorson
Dr. Lyle Hanson
Dr. Roger Harvey
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CHAPTER 25 - VETERINARY DRUGS

SUBJECT: Proper Drug Use and Residue Avoidance by Non-Veterinarians

BACKGROUND

This Compliance Policy Guide (CPG) provides regulatory guidance for the development of cases resulting from the use of animal drugs contrary to label directions ("extra-label use") by non-veterinarians in food-producing animals. It also provides guidance on measures that can be taken by nonveterinarians to ensure proper drug use and avoid illegal residues (See Compliance Policy Guide 7125.06 for guidance on proper drug use by veterinarians).

Extra-label use of drugs by nonveterinarians in food-producing animals is a significant public health concern and a contributing factor in illegal residues in edible animal tissue. Such use of drugs is illegal under the Federal Food, Drug, and Cosmetic Act (the Act). Under the Act, virtually all drugs that are intended for use in animals are subject to extensive pre-market approval requirements. New animal drugs (those drugs that are not generally recognized as safe and effective for their labeled conditions of use) may not be legally marketed unless they are the subject of an approved new animal drug application (NADA). A new animal drug that has not been approved is "unsafe" under Section 512 of the Act, and adulterated under Section 501(a)(5).

The pre-market approval process ensures that when animal drugs are used in accordance with the labeled directions (type of animal, medical conditions, dosage, route of administration, and any other precautions or instructions for the safe and effective use of the product, including withdrawal and milk discard times) milk, eggs, and the edible tissues of slaughtered animals treated with a drug will not contain potentially harmful or violative drug residues. The withdrawal time is the period following the last treatment with the drug during which the animal may not be offered for slaughter and during which products from this animal such as milk and eggs may not be offered for sale. The length of

the withdrawal period is based upon the time necessary for drug residues in the animal to deplete to levels that are shown to be safe.

The withdrawal period is based on residue studies conducted under the labeled conditions of use (type of animal, dosage, route of administration) to ensure that residues above levels that have been shown to be safe will not be present in animal products used as human food. Those levels, called tolerances or safe concentrations, represent the amount of drug legally permitted in the edible tissue of the animal. The withdrawal period enables the animal to metabolically reduce the drug level in its tissues to levels that are not of public health concern.

POLICY

A. USE OF DRUG PRODUCTS CONTRARY TO LABEL DIRECTIONS

A new animal drug is "unsafe" under Section 512(a)(1) of the Act and adulterated under Section 501(a)(5) when it is not used in accordance with its approved label directions. Therefore, use of an unapproved new animal drug or of an approved new animal drug contrary to label directions constitutes a violation of the Act.

Use by veterinarians and nonveterinarians (e.g., livestock and poultry producers, herdsmen, dealers, haulers, etc.) of veterinary drug products in food-producing animals contrary to label directions is illegal. Uses that are contrary to label directions would include ignoring labeled withdrawal times or milk discard times, using the product in a species not indicated on the label, using the drug to treat a condition not indicated on the label, administering the drug at a different dosage than stated on the label, or otherwise failing to follow label directions for use and administration of the drug.

FDA, in the exercise of its regulatory discretion, allows veterinarians, acting in a valid veterinarian-client-patient relationship and in accordance with the conditions outlined in CPG 7125.06 ("Extra Label Use of New Animal Drugs in Food-Producing Animals") to consider the use of a new animal drug

contrary to label directions when the health of the animal is immediately threatened and suffering or death would result from failure to treat the affected animal(s). This policy applies only to licensed veterinarians who administer, prescribe, or dispense drugs in accordance with the policy guide and applicable state laws. If the veterinarian does not personally administer the drugs, certain labeling information is required, as explained in Compliance Policy Guide 7125.06. Also, no drug residues above permitted levels may be present in the final food product whenever a drug is used in an extra-label manner by a veterinarian.

B. AVOIDING DRUG RESIDUES THROUGH PROPER DRUG USE

The presence in food of a residue of a new animal drug above permitted levels causes the food to be adulterated under Section 402(a)(2)(D) of the Act. The ability of persons who produce and sell food-producing animals and animal products such as milk and eggs to have systems to monitor and control the use of animal drugs is an indispensable adjunct to providing appropriate therapy and is essential to avoiding illegal residues. Such systems also enable federal and state officials to monitor the food supply and ensure that it is free of harmful drug residues. Failure to establish and utilize such systems can result in adulteration of live food-producing animals, for reasons explained in the following paragraphs.

The Act defines food as "(1) articles used for food or drink for man or other animals... and (3) articles used for components of any such article." § 201 (f). Food-producing animals, even though not in their final, edible form, have been held to be food under the statute (United States v. Tomahara Enterprises, Ltd., Food, Drug Cosm. L. Rep. (CCH) ¶ 38,217 (N.D.N.Y. 1983) (live calves intended as veal are food). More generally, courts have long held that unprocessed or unfinished articles are or can be food. See Otis McAllister & Co. v. United States, 194 F.2d 386, 387 (5th Cir. 1952) and cases cited there (unroasted coffee beans are food). Thus, FDA regards live animals raised for food as "food" under the Act.

Section 402(a)(4) provides that a food shall be "deemed" to be adulterated "if it has been prepared, packed, or held under insanitary conditions whereby...it may have been rendered injurious to health." The phrase "insanitary conditions" in §402(a)(4) is not limited to filth or bacteria. Indeed, the courts have construed "insanitary conditions" in §402(a)(4) to comprehend a variety of conditions that may render food injurious to health. See United States v. Nova Scotia Food Products Corp., 417 F. Supp. 1364, 1369-70 (E.D.N.Y. 1976), rev'd on other grounds, 568 F.2d 240 (2d cir. 1977); United States v. 1200 Cans, Pasteurized Whole Eggs, 339 F. Supp, 131, 140-41 (N.D. Ga. 1972). Thus, in the context of holding food-producing animals, FDA believes that "insanitary conditions" could include a lack of adequate controls concerning treatment of food-producing animals with drugs.

The "may have been rendered injurious to health" standard requires a reasonable possibility of injury. See United States v. Lexington Mill & Elevator Co., 232, U.S. 399, 411 (1914); see also Berger v. United States, 200 F.2d 818 (8th Cir. 1952). In FDA's view, failure to maintain adequate controls with respect to use of animal drugs could result in a reasonable possibility of injury to human health because illegal drug residues often result from a lack of such controls, and illegal drug residues could have adverse toxicological effect on consumers, ranging from acute to chronic reactions.

Under the circumstances described above, FDA may regard live animal raised for food as adulterated under §402(a)(4).

Persons involved in raising, handling, transporting, holding, and marketing food-producing animals are encouraged to establish systems to ensure that animal drugs are used properly and to prevent potentially hazardous drug residues in edible animal products. These control systems should include the following measures:

a) Identifying and tracking animals to which drugs were administered, in order to preclude the sale of edible animal tissue, milk, or eggs containing illegal residues (identification may be by specific animal identification, pen or lot, quarantine/segregation, or other means);

b) Maintaining a system of medication/treatment records that, at a minimum, identifies the animal(s) treated (individual animals, pens, lots, etc.), the date(s) of treatment, the drug(s) administered, who administered the drug(s), the amount administered, and the withdrawal time prior to slaughter (and when milk, eggs, etc. can be used, if appropriate);

c) Properly storing, labeling, and accounting of all drug products and medicated feeds;

d) Obtaining and using veterinary prescription drugs only through a licensed veterinarian based on a valid veterinarian/client/patient relationship; and

e) Educating all employees and family members involved in treating, hauling, and selling the animals on proper administration techniques, observance of withdrawal times, and methods to avoid marketing adulterated products for human food.

Establishing and maintaining such systems should help producers avoid marketing milk, eggs, or edible animal tissue containing illegal residues and avoid regulatory action based on Sections 402(a)(2)(D), 402(a)(4), or 501(a)(5).

Persons who do not administer medications but who purchase or lease animals for milking or sale for slaughter (such as livestock dealers) should also establish and implement a record-keeping system. This system should include information on the source of the animal and whether the animal has been medicated (when, with what drug, and the withdrawal period) to preclude marketing of edible animal tissue, milk or eggs, that may contain illegal residues.

Such persons may also be subject to regulatory action if they market animals containing illegal residues and have failed to take reasonable precautions to prevent the sale of adulterated food.

REGULATORY ACTION GUIDANCE

FDA investigators should determine the extent of the misuse of drugs in food-producing animals during the course of their inspections or investigations, such as when following up on an illegal tissue residue report from United States Department of Agriculture/Food Safety and Inspection Service or other information concerning improper drug use. The occurrence of an illegal tissue residue will be regarded as prima facie evidence of improper drug use, and may be an appropriate subject for enforcement action. Of course, before recommending such action, FDA will also consider whether evidence of proper drug usage, as described under the "Policy" section above, exists to demonstrate that every reasonable effort has been made to preclude residues.

CVM is prepared to recommend regulatory action when drugs are misused as described above. If the misuse involves administration contrary to labeled directions, the drug itself is adulterated under Section 501(a)(5). If an illegal residue is involved, the food is adulterated under Section 402(a)(2)(D). Further, if an illegal residue is involved and inadequate control measures are documented, the food (edible animal tissue, milk, or eggs) may also be adulterated under Section 402(a)(4). Except in egregious situations, a Warning Letter ordinarily is the appropriate action of choice. Compliance Program 7371.006, Illegal Drug Residues in Meat and Poultry, provides additional regulatory guidance for illegal residues.

Drug residues in milk should be handled according to Compliance Programs 7318.003, Milk Safety Program and 7371.008, National Drug Residue Milk Monitoring Program.

Issued: 07/09/93

AAAP Survey 1993							
All Respondants	(n=249...Note Not all questions answered)						
	Number	Min	Max	Mean	Median		
Age	244	26	83	45.8	43		
Males	203						
Females	39						
GradYr	184	1931	1993	1973.5	1977.5		
NE	57						
S	89						
C	65						
W	24						
C&SA	2						
No ID	12						
BS	132						
MS	112						
PhD/ScD	214						
OtherDgr	4						
Board	102	Note: 82 have 1; 20 have 2 boards					
Training by:							
Degree	108						
Residency	32						
Combination	17						
On Job	158						
Other	18						
Work Full Time	218						
Work Part Time	13						
Retired	16						
Unemployed	1						
Other Employment	9						
Employed by:							
College/Univ	87						

AAAP Survey 1993							
All Respondants	(n=249...Note Not all questions answered)						
	Number	Min	Max	Mean	Median		
Federal	25						
State	25						
PHS	0						
Military	0						
VaccPharm	33						
PltProd	67						
PrvtPrct	22						
FeedCo	8						
Yrs Employed	208	0.5	46	13.2	10		
YrsPresent Posit	220	0.09	43	7.9	5		
Salary	236	0	190000	65082	62000		
Fringe	190	0	65000	13436	11300		
Benefits:							
LifeIns	196						
ŒE	134						
Def$$	0						
Pension	171						
OthrFrng	2						
Dental	144						
Medical	224						
Auto	62						
PrftShr	63						
PdDues	108						

	AAAP Survey 1993					
	Data for Respondants by Region					
	Number	Min	Max	Mean	Median	
Age						
NE	55	29	77	44.4	42	
S	88	26	75	44.6	42	
C	65	27	83	46.2	42	
W	24	28	74	48.4	46	
C&SA	2	39	57	48	48	
Males						
NE	44					
S	76					
C	56					
W	18					
C&SA	2					
Females						
NE	11					
S	12					
C	7					
W	6					
C&SA	0					
Grad Yr						
NE	42	1943	1991	1974	1977	
S	67	1953	1993	1974.7	1978	
C	49	1931	1991	1973.9	1976	
W	17	1949	1989	1972.5	1977	
C&SA	1	1979	1979	1979	1979	
Yrs Present Employ						
NE	47	0.5	46	12.6	7	
S	73	0.8	32	12.1	9	
C	54	0.5	40	13.3	10	
W	22	1	39	15.1	10.5	
C&SA	2	12	17	14.5		

	AAAP Survey 1993					
	Data for Respondants by Region					
	Number	Min	Max	Mean	Median	
Present Position						
NE	53	0.25	40	6.7	3	
S	82	0.8	32	8.6	6	
C	55	0.09	43	8.2	5	
W	18	1	23	6.6	5	
C&SA	2	0.25	8	4.1		
Salary						
NE	55	0	120000	64762	65000	
S	87	1000	190000	63677	60000	
C	61	21000	185000	67989	63000	
W	21	5	110000	64548	55000	
C&SA	2	30000	71000	50500		
Fringe						
NE	42	0	65000	15106	11000	
S	70	1000	63000	14068	12000	
C	50	0	45000	13652	12000	
W	19	0	20000	9476	8000	
C&SA	1	5000	5000	5000		
WFT						
NE	54					
S	82					
C	51					
W	20					
C&SA	2					
WPT						
NE	0					
S	5					
C	6					
W	2					
C&SA	0					

	AAAP Survey 1993					
	Data for Respondants by Region					
	Number	Min	Max	Mean	Median	
Retired						
NE	2					
S	3					
C	6					
W	3					
C&SA	0					
Other Employ						
NE	0					
S	8					
C	1					
W	0					
C&SA	0					

	AAAP Survey 1993								
	Additional Information by Region								
Other Information by Region									
Employed by:	College/Univ	Federal	State	Vacc/Pharm	PltProd	FeedCo	PrvPrct		
NE	20	6	4	14	15	2	3		
S	31	6	14	4	23	0	4		
C	20	11	3	11	19	5	7		
W	11	1	3	1	6	1	7		
C&SA	0	0	0	0	2	0	0		
Fringe Benefits	LifeIns	OE	Pension	OtherFrng	Dental	Medical	Auto	PrftShr	PdDues
NE	49	33	39	0	43	52	13	14	26
S	70	51	61	2	32	83	27	24	40
C	51	32	43	0	46	57	14	17	28
W	15	13	16	0	14	19	6	4	8
C&SA	1	0	1	0	0	2	1	1	1
Education:	BS	MS	PhD/ScD	DVM/VMD	OtherDgr	Boards			
NE	28	28	24	49	0	22			
S	51	40	41	75	4	40			
C	35	25	19	60	0	22			
W	14	10	7	20	0	12			
C&SA	0	2	1	1	0	0			
Training by:	Degree	Residency	Combine	On Job	Other Trn				
NE	23	10	7	34	1				
S	47	3	6	55	14				
C	25	11	2	44	1				
W	8	6	1	16	2				
C&SA	1	0	1	0	0				

AAAP Oral Program 1994

MONDAY SESSION A (1)

1 1Mon 09:00 AM
James E. Pearson, Dennis A. Senne, Brundaban Panigrahy, Robert G. Webster: Avian influenza virus, subtypes H5N2 and H7N1, and the corresponding antibodies in ratites and other species.

3 1Mon 09:20 AM
Max Brugh: Experimental infection of chickens and rheas with ratite-origin avian influenza viruses.

5 1Mon 09:40 AM
Michael L. Perdue, John Latimer: Comparison of the structures of H7 and H5 hemagglutinin proteins of avian influenza virus isolates from domestic poultry and ratites

7 1Mon 10:00 AM
Richard D. Slemons, Beverly R. Byrum, David E. Swayne: A possible role for proteolytic bacteria in avian influenza infections.

10:20 AM DISCUSSION

10:30 AM BREAK

MONDAY SESSION B (2)

2 2Mon 09:00 AM
Manuel E. Colmenares, Morella De Rosa, Simon Leal, Gaspar Paez: Pancreatic fibrosis in stunted chickens.

4 2Mon 09:10 AM
Scott D. Fitzgerald, Willie M. Reed: A suspected case of clinical western equine encephalitis in chickens.

6 2Mon 09:20 AM
Mark A. Goodwin, Armando Antillon: Massive necrotizing herpesvirus bursitis and thymusitis in broilers.

8 2Mon 09:30 AM
H. L. Shivaprasad: Pathology of Salmonella enteritidis in chicken layers.

10 2Mon 09:40 AM
Craigmyle Riddell: Chlamydiosis in rheas.

12 2Mon 09:50 AM
Bernard J. Beckman, C. W. Howe, D. W. Trampel, M. C. DeBey, J. L. Richard, Y. Niyo: Aspergillis fumigatus Keratitis with Intraocular Invasion in 15-Day-Old Chicks

14 2Mon 10:00 AM
Donald L. Singletary, Barrett S. Cowen, Anthony E. Castro, Tom Soman: Corona virus infection of guinea fowl.

16 2Mon 10:10 AM
Gorica M. Rajcic-Spasojevic, Daryll A. Emery, Dave P. Boeschen, Ron L. Lippert, Darren E. Straub: Congenital malformations in turkeys caused by inappropriate incubation temperature.

18 2Mon 10:20 AM
Conrad R, Pope, Edwin M. Odor, Mariano Salem, John K. Rosenberger, Jack Gelb, Jr.: The gross and microscopic lesions associated with the Delaware variant serotype of infectious bronchitis virus (IBV) isolated from broilers in 1992.

10:30 AM BREAK

9 1Mon 11:00 AM
David E. Swayne, Richard D. Slemons: Low pathogenic avian influenza viruses infect the brain without replicating in neurons.

11 1Mon 11:15 AM
M. Suresh, Jagdev M. Sharma: B Lymphocyte tropism and tissue distribution of hemorrhagic enteritis virus studied by in situ hybridization.

13 1Mon 11:30 AM

Dressman: Reed Rumsey Award Winner...No Title Yet

12:00 N AAAP BANQUET

15 1Mon 02:00 PM
Keyvan Nazerian, Noboru Yanagida: Expression of envelope gene of subgroup A avian leukosis virus in fowlpox virus and induction of neutralizing antibody.

17 1Mon 02:15 PM
Martin Sevoian, Amrut Bhogle: Detection and characterization of lymphokines and protective antigens of JMV-1 lymphoblastoid cell line.

19 1Mon 02:30 PM
Dexin Sui, Ping Wu, Lucy F. Lee: Marek's disease virus gene encoding DNA polymerase.

21 1Mon 02:45 PM
Delin Ren, Lucy F. Lee, Paul Coussens: Characterization of regulatory function of Marek's disease virus immediate-early gene product.

3:00 PM BREAK

20 2Mon 11:00 AM
G. Thomas Holder: The economic impact of feeding broiler feed with full level nicarb to breeders in full production.

22 2Mon 11:15 AM
Tom P. Brown, Nicholas M. Dale, Mark E. Williams: Spiking mortality in broilers: Effects of dietary fat, nicarbazine, enteritis, and feed withdrawal on blood glucose.

24 2Mon 11:30 AM
William M. Colwell, Leonard L. Brooks, Jr.: Megatrends in Salmonella isolations over a 17 year period.

26 2Mon 11:45 AM
Pedro N. Villegas, Gloria E. Avellaneda, R. K. Page: Immune status of Georgia broilers against Newcastle disease.

12:00 N AAAP BANQUET

28 2Mon 02:00 PM
Susan B. Lockaby, Frederic j. Hoerr, Lloyd H. Lauerman: Virulence and tissue tropism of Mycoplasma synoviae in chicken embryos.

30 2Mon 02:15 PM
Henry H. Fan, Stanley H. Kleven, Mark W. Jackwood: Application of Polymerase Chain Reaction with Arbitrary Primers to Strain Identification of Mycoplasma gallisepticum.

32 2Mon 02:30 PM
David H. Ley, Vladimir A. Gurevich, Ian D. Walker: Identification and characterization of Mycoplasma synoviae immunogenic integral membrane proteins.

34 2Mon 02:45 PM
Lloyd H. Lauerman: Biotinylated general mycoplasma probe for the efficient capture and purification of nucleic acids.

3:00 PM BREAK

23 1Mon 03:30 PM
Ping Wu, Dexin Sui, Lucy F. Lee: Identification of a Marek's disease virus gene homologous to UL32 of herpes simplex virus.

25 1Mon 03:45 PM
Richard L.. Witter, Chen-lo H. Chen, Hyun S. Lillehoj, Donald w. Ewert, Lucy F. Lee, Aly M. Fadly: Immunohistochemical analysis of lymphocyte and viral antigens on cells from Marek's disease and retroviral lymphomas in chickens.

27 1Mon 04:05 PM
Bruce W. Calnek, Franklin R. Moore, Stephen B. Bloom, Raymond W. Harris: Chromosomal Aberration (1p+) in Marek's Disease Cell Lines versus Neoplastic Transformation

29 1Mon 04:25 PM
Robin W. Morgan, John L. Cantello, Qing Xie, Amy S. Anderson: Regulation of the Marek's disease virus iiICP4 gene: implications for productive infection, latency, and transformation.

31 1Mon 04:45 PM
Girish Sarma, William G. Greer, Cecelia Irvin: Comparative evaluation of serotype-1 Marek's disease vaccines in commercial layers and broilers.

36 2Mon 03:30 PM
Maricarmen Garcia, Mark J. Jackwood, Henry Fan, Stanley H. Kleven, Sharon Levisohn: Comparison of the 16S - rRNA sequences of M. iowae strains.

38 2Mon 03:45 PM
Roy S. Raymond, Ben Abdelmoumen Boutheina, Brodeur Bernard: An enzyme-linked immunosorbent assay for detection of avian mycoplasmas in culture.

40 2Mon 04:00 PM
Amer N. Silim, Ali Kheyar, Sudhir Reddy, David Lee: The 64kDa polypeptide of Mycoplasma gallisepticum has two different epitopes responsible for growth inhibition and hemagglutination.

42 2Mon 04:15 PM
Marcus A Head, Stanley A. Kleven, Mark W. Jackwood, John R. Glisson, Maricarmen Garcia: A serological diagnostic test for Mycoplasms iowae utilizing a dot-immunobinding assay.

44 2Mon 04:30 PM
Penelope S. Gibbs, Richard E. Wooley, Stanley H. Kleven: The effect of complement on in vitro growth of virulent and avirulent strains of Mycoplasma gallisepticum.

46 2Mon 04:45 PM
Carolyn L. Miller, Henry H. Fan, Stanley H. Kleven: Comparison of selected Mycoplasma synoviae isolates by DNA fingerprinting.

48 2Mon 05:00 PM
Ben Abdelmoumen, Boutheina Brousseau Roland, Roy S. Raymond: A Mycoplasma synoviae specific DNA probe.

AAAP ORAL PROGRAM 1994

TUESDAY SESSION A (1)

33 1Tues 09:00 AM
Olufemi O. Fatunmbi, Willie M. Reed: Identification and characterization of avianpox viruses by western blot analysis.

35 1Tues 09:15 AM
Willie M. Reed, Olufemi O. Fatunmbi: Characterization and immunogenicity of "variant" strains of avian poxviruses.

37 1Tues 09:30 AM
Deoki N. Tripathy, William M. Schnitzlein: Characterization of diphtheritic fowlpox virus isolates from previously vaccinated birds.

39 1Tues 09:45 AM
Susan Lloyd, Ed Berkhoff, Kevin Kessler, Martin Ficken: Characterization of a mycoplasma isolated from an ostrich and its pathogenicity in chickens and turkeys.

41 1Tues 10:00 AM
Miguel A Marquez: Control and erradication of Mycoplasma synoviae in a multi-age heavy breeder integration.

43 1Tues 10:15 AM
Steven R. Clark, Dave Pyle: Mycoplasma gallisepticum outbreak in commercial turkeys.

10:30 AM AAAP BUSINESS MTG

TUESDAY SESSION B (2)

50 2Tues 09:00 AM
Frederic J. Hoerr, Marshall R. Putnam, Aly M. Fadly: Reticuloendotheliosis manifested as neoplasia and mortality in broiler breeders. (case report).

52 2Tues 09:15 AM
Aly M. Fadly, Frederic J. Hoerr, Willie M. Reed, Richard L. Witter: Isolation of reticuloendotheliosis virus from broiler breeder chickens experiencing lymphoid leukosis-like disease.

54 2Tues 09:30 AM
James F. Davis, Anthony E. Castro, Mark A. Goodwin, Juan C. De La Torre, E. Craig Player, J. Thomas Doman, Debrah W. Fuchs: Arenavirus-like particles associated with enteritis in Georgia chickens.

56 2Tues 09:45 AM
Bruce A. Singbeil, Ralph A. Ernst, Patricia S. Wakenell, Arthur A. Bickford, Peter R. Woolcock, Richard Chin: Early enteric reo virus infection associated with high mortality: challenge study results.

58 2Tues 10:00 AM
Roy D. Montgomery, William R. Maslin, Carolyn R. Boyle, Danny L. Magee, A. Timothy Leard: Experiences with infectious agents isolated from a runting/stunting condition in broilers.

60 2Tues 10:15 AM
Robinette W. Gilbert, Jean E. Sander, Tom P. Brown: Oral lesions associated with copper sulfate toxicosis in commercial layers.

10:30 AM AAAP BUSINESS MTG

45 1Tues 01:30 PM
Hector M. Cervantes: Experimental infection of day-of-hatch broiler chicks with Salmonella berta.

47 1Tues 01:45 PM
Theodore J. Kottom, Lisa K. Nolan, Richard E. Wooley, Patricia P. Rosen: Comparison of the virulence and invasiveness of Salmonella typhimurium var Copenhagen from healthy and ill chickens.

49 1Tues 02:00 PM
David J. Henzler, Wayne d. Schlosser, David L. Kradel, Mark C. Nesselrodt, John Mason: Variability associated with environmental sampling for Salmonella enteritidis in chicken layer flocks.

51 1Tues 02:15 PM
Mazhar I. Khan: Utilization of Salmonella specific PCR in the Salmonella enteritidis reduction program.

53 1Tues 02:30 PM
Jean G. Petter: Evaluation of phage type heterogeneity within characterized Salmonella enteritidis field isolates.

55 1Tues 02:45 PM
Richard K. Gast: Assessing the comparative virulence for chickens of Salmonella enteritidis phage type 4 and phage types isolated from poultry in the U.S.

3:00 PM BREAK

57 1Tues 03:30 PM
Jubril O. Hassan, Roy Curtiss III: The role of Salmonella antigens in cross protection against Salmonella serotypes induced by vaccination.

59 1Tues 03:45 PM
J. Lloyd Spencer, Manuel M. Garcia: Increased resistance to cecal colonization by Salmonela enteriditis and Campylobacter jejuni in chickens fed vermicompost.

62 2Tues 01:30 PM
Alex J. Bermudez, George E. Rottinghaus, David R. Ledoux: Determination of the no effect level of moniliformin containing fusarium fujikuori culture material fed to chickens and turkeys.

64 2Tues 01:45 PM
Robert A. Norton, John Kirk Skeeles, Joseph N. Beasley: Etiological agents associated with liver foci in turkeys.

66 2Tues 02:00 PM
Martin D. Ficken, Steve W. Breeding, Mark Blakley: Hepatic necrosis of turkeys.

68 2Tues 02:15 PM
David R. Hermes: A concurrent infection of turkey breeder hens with erysipelas and swine influenza (H1, N1)

70 2Tues 02:30 PM
Ahmed A. Mutalib, Merrillee Holland, John Barnes: Use of ultrasound for diagnosis of osteomyelitis in turkeys.

72 2Tues 02:45 PM
Robert Droual, Mohammed Rezvani: Green liver, synovitis, and osteomyelitis in turkeys associated with E. coli.

3:00 PM BREAK

74 2Tues 03:30 PM
Geraldine R. Bayyari, Joseph N. Beasley, William E. Huff, Narayan C. Rath, Janice M. Balog: The incidence of synovitis, osteomyelitis, and leg problems in turkeys challenged with suspected L-form revertants of Bacillus and Staphylococcus species.

76 2Tues 03:45 PM
F. W. Pierson, Charles H. Domermuth, Walker S. Thompson, Richard L. Boyd: Immunoexposure profiles of turkey flocks experiencing mortality due to colibacillosis.

61 1Tues 04:00 PM
Scott L. Gillingham, Richard Julian, Carleton Gyles: An in vitro trial to observe the application of a commercial defined direct fed microbial product to competitively exclude Salmonella enteritidis PT8 in broiler chicks.

63 1Tues 04:15 PM
Frank W. Edens, Ivan A. Casas, Carmen R. Parkhurst: Effect of in ovo Lactobacillus reuteri on Salmonella typhimurium and Escherichia coli-challenged chickens.

65 1Tues 04:30 PM
Chinling Wang, Mary L. Scruggs, Kenneth K. Stallings: The efficacy of sodium carbonate peroxyhudrate, trisodium phosphate or lactic acid for reduction of Salmonella on chicken skin.

67 1Tues 04:45 PM
Richard E. Wooley, Lisa K. Nolan, Penelope S. Gibbs, John Brown: Characteristics of pathogenic avian Escherichia coli.

78 2Tues 04:00 PM
Lisa A. Newberry, John K. Skeeles: Staphylococcus aureus and other gram + infections associated with acute virulent hemorrhagic enteritis in growing turkeys.

80 2Tues 04:15 PM
Nicholas D. Primm: Comparison of Newcastle Disease Virus and Bordetella avium titers in turkeys vaccinated by water route and by water route in conjunction with killed vaccine at day of age.

82 2Tues 04:30 PM
Radivoje Spasojevic, John A. Newman: Evaluation of an ELISA test developed by KPL for Bordetella avium infections in turkeys.

84 2Tues 04:45 PM
Donald L. Reynolds: Evaluation of a recombinant Newcastle disease vaccine for use in turkeys

AAAP ORAL PROGRAM 1994

WEDNESDAY SESSION A (1)

69 1Wed 09:00 AM
David Cavanagh, Jing Li, Jane K. A. Cook: Variation exhibited by avian pneumoviruses.

71 1Wed 09:20 AM
Ellen W. Collisson, Li Wang, Elham Ebian, Minglong Zhou: Recombination is a mechanism for the evolution of IBV.

73 1Wed 09:40 AM
Kristi M. Moore, Mark W. Jackwood: Infectious bronchitis virus: In vitro RNA recombination.

WEDNESDAY SESSION B (2)

86 2Wed 09:00 AM
Michael D. Ruff, Gary C. Wilkins: Factors affecting sensitivity testing of anticoccidial drugs.

88 2Wed 09:15 AM
David V. Rives, S. Michael Stringham, Laddie L. Munger: Effect of the ingestion of the red imported fire ant (Solenopsis invicta Buren) on Turkey Poults.

90 2Wed 09:30 AM
Robert Droual, Thomas B. Farver, Arthur A. Bickford, Richard P. Chin: Relationship of age, sex, and concurrent gastrointestinal disease to necrotic enteritis in turkeys.

91 2Wed 09:45 AM
Ronald L. Lippert, Daryll A. Emery, Darren E. Straub, Gorica R. Spasojevic, Marilyn I. Edman: Field evaluation of cell-cultured and spleen propagated hemorrhagic enteritis live-virus vaccines using a USDA licensed ELISA.

75 1Wed 10:00 AM
Jack Gelb, Jr., Calvin L. Keeler, Jr., Karen L. Reed, W. Allan Nix: Evolution of infectious bronchitis virus in chickens raised on the Delmarva Peninsula as determined by virus-neutralization, cross-protection, and S-1 sequence analysis.

77 1Wed 10:20 AM
Syed A. Naqi, Wei Jia, Kemal Karaca, Alice Andriguetto, Beverley Bauman: Antigenic and Genetic characteristics of an IBV Isolate which expresses both Massachusetts- and Connecticut-specific monoclonal antibody epitopes.

10:40 AM BREAK

79 1Wed 11:00 AM
Mark W. Jackwood, Deborah A. Hilt: Sequence analysis of the S1 glycoprotein gene of a variant infectious bronchitis virus.

81 1Wed 11:15 AM
Carol U. Meteyer, Douglas E. Docherty, J. Christian Franson, Dennis A. Senne: Histologic lesions and their correlation with virus isolation in an outbreak of neurotropic-velogenic Newcastle disease in cormorants.

83 1Wed 11:30 AM
Daniel J. King: Newcastle disease virus (NDV) pathotypes: A comparison of recent field isolates with reference NDV strains.

85 1Wed 11:45 AM
Ching Ching Wu: Single strand conformation polymorphism for differentiation of infectious bursal disease virus.

87 1Wed 12:00 PM
Holly S. Sellers, Pedro N. Villegas, Mark W. Jackwood: Production of IBDV PCR primers specific for strains STC, OH and var A.

89 1Wed 12:15 PM
Daral J. Jackwood, Renee J. Jackwood: Diagnosis of Infectious Bursal Disease Viruses: Differentiation of Serotypes and Subtypes Using Rstriction Enzyme Analysis.

92 2Wed 10:00 AM
Darrell W. Trampel, Neil S. Jensen, Lorraine J. Hoffman: Chicken cecal spirochetosis.

93 2Wed 10:15 AM
Jagdev M. Sharma, Kemal Karaca: Activation of macrophage function by an avian cytokine.

10:30 AM BREAK

94 2Wed 11:00 AM
Jean-Pierre Vaillancourt, Abdelhamid Elfadil: Risk factors associated with cellulitis in broilers.

95 2Wed 11:15 AM
Tsang Long Lin: Pathologic and bacteriologic study of scabby hip lesions in broiler chickens. I. Elephant hide.

96 2Wed 11:30 AM
Teresa Y. Morishita, Linda J. Lowenstine, Dwight C. Hirsh, Dale L. Brooks: Characterization of Pasteurella multocida isolated from Birds of Prey.

97 2Wed 11:45 AM
I-Hsin, N. Cheng, John R. Glisson, Chinling Wang: Characterization of monoclonal antibodies for Pasteurella multocida.

98 2Wed 12:00 PM
Hossein M. Sagha, John R. Glisson: Preparation, characterization and immunogenicity of Pasteurella multocida lipopolysaccharide serotype 3:4, 3, and 4.

99 2Wed 12:15 PM
Annabel E. Gonzales, John R. Glisson: Transposon mutagenesis of Haemophilus paragallinarum with Tn 916.

DRAFT POSTER PROGRAM 1994 AAAP

1. Robert F. Silva, Jay G. Calvert, Lucy F. Lee: A simple immunoperoxidase staining technique to quantitate Marek's disease virus plaques.

2. Patricia S. Wakenell, Phil Kass: Effect of virulent Marek's disease virus on serum chemistry values of HVT vaccinated or unvaccinated SPF chickens.

3. Celina Buscaglia, Pablo Nervi: Isolation of three very virulent strains of Marek's disease virus in Argentina.

4. Lucy F. Lee, Shitego Yoshida, Noboru Yanagida, Keyvan Nazerian: Identification of a major protective epitope of Marek's disease virus glycoprotein gB.

5. Kelli L. Hiett, Margaret A. Myszewski, Norman J. Stern, Richard J. Meinersmann: Molecular characterization of differences of flagellin in a congenic pair of Campylobacter jejuni.

6. Richard J. Meinersmann, Christian A. Khoury: Efficacy of an oral vaccine against Campylobacter jejuni in chickens.

7. Antonio P. Ferreira, Toyoko Watanabe Sato, Tomomasa Yano: Detection of protease and its possible role in chicken Escherichia coli infection.

8. Tom P. Brown, Mark E. Williams, Stephan G. Thayer: Pathogenicity of lactose-negative E. coli isolate in turkey poults: Intravenous vs. aerosol challenge and broth vs. in ovo cultivation.

9. Richard B. Rimler: Cross-protection against Pasteurella multocida in tuckeys with laboratory-grown cultures..

10. Kakambi V. Nagaraja, Lois A. Bichler, Vaithianathan Sivanandan, David A. Halvorson: Salmonella enteritidis (SE) in eggs, cloacal swabs and internal organs of laying hens experimentally infected with SE.

11. Lisa K. Nolan, Catherine W. Giddings, Richard E. Wooley, John Brown: Distribution of invA, pagC, cvaC, and spvC genes among Salmonella isolates of animals with emphasis on poultry isolates.

12. Hector M. Cervantes: Effect of Polyvalent inactivated vaccine type on the incidence of false-positive rapid serum plate test reactions for Mg and Ms.

13. Nathaniel L. Tablante, Jean-Pierre Vaillancourt, Lloyd J. Weber: An outbreak of hepatitis-liver hemorrhage syndrome in multi-age commercial layer operation.

14. Eric J. Lovell, Jeannine M. Harter-Dennis: Findings from four cases of cannibalism in two week old boilers.

15. Mark A. Goodwin, John Brown: Persistence of a geographic locus for respiratory cryptosporidiosis in Georgia broiler chickens.

16. Nathaniel L. Tablante, Richard J. Julian, Jean-Pierre Vaillancourt: Hepatitis-liver hemorrhage syndrome in commercial laying hens: a survey of Ontario egg producers.

17. Nathaniel L. Tablante,Jean-Pierre Vaillancourt: A Temporo-spatial mortality study in a 20,000-hen layer barn.

18. John Brown, Mark A. Goodwin, Denise I. Bounous: The relationship of blood glucose values to idiopathic "spiking mortality" syndrome in chickens.

19. Martine Boulianne, E. James Squires, Richard J. Julian: Effect of ante mortem exposure to cold temperature on meat coloration of broiler chicken carcasses.

20. Tom P. Brown, Mark E. Williams: Copper sulfate-induced oral lesions in broiler chickens: Effect of hydration and particle size.

21. Seyed M. Mirsalimi, Omid Rahimzadeh, Mohammad Moafi: Effects of various diets on the occurence of ascites on normal and ascites sensitive chickens from a primary meat-type breeding flocks.

22. Kevin L. Kessler, Steve Breeding, Andy McRee, Peter Ferket, Martin Ficken: Effect of protein restriction and a urease inhibitor during the brooding phase on the incidence of spontaneous turkey cardiomyopathy.

23. A. Singh Dhillon: High mortality in young ostriches.

24. Joe N. Beasley, Gerry R. Bayyari, William E. Huff: Study of green livers in turkeys.

25. H. John Barnes, Gina M. Elias, David v. Fernandez, Joel W. Coleman, R. Shannon Jennings: Growth depression in tom turkey flocks produced on farms in continuous production.

26. George N. Rowland, Jeanna L. Wilson, Royce E. Roberts, Jean E. Sander, John R. Glisson: Conformational abnormalities of the spinal column in male broiler breeders.

27. Yan Ghazikhanian, Robert Droual, Arun Bahl, Thomas Bryan, Barry Kelly, Patrick McCaskey, George Rowland, Becky Tilley, Tami Kelly, Ken Takeshita: Proximal femoral pathology, appropriate terminology.

28. H. L. Shivaprasad: The differences between articular gout and viscesral gout in chickens (birds).

29. H. L. Shivaprasad: Normal embryonic cartilage of ostriches resembling tibial dyschondroplasia of poultry.

30. Scott D. Fitzgerald: An acute outbreak of Leucocytozoonosis in domestic ducks.

31. Anilton C. Vasconcelos, Kenneth M. Lam: Apoptosis in chicken embryo induced by the infectious bursal disease virus.

32. Kenneth M. Lam, Anilton C. Vasconcelos: Apoptosis induced by Newcastle disease virus.

33. Mark A. Goodwin, Debrah W. Fuchs, E. Craig Player, Jack Hynes, Michael Polk, Linnea Newman: Comparison of two formalin substitutes to 10% neutral buffered formalin for the fixation of chicken organs. I. A light microscopic study.

34. Andrea M. Miles, Vivian W. Doelling, Richard P. Gildersleeve, Patricia V. Phelps, Catherine A. Ricks, Julius K. Tyczkowski, Craig E. Whitfill: Efficacy of an immunostimulant administered in ovo.

35. Martin Sevoian, Kesuo Fan: Development of a biodegradeable slow-release delivery system for drugs, and vaccines.

36. Terence L. Pertile, Kemal Karaca, Jagdev M. Sharma, Mary M. Walser: The effect of activated macrophages on chicken spleen cell mitogenesis.

37. Narayan C. Rath, Geraldine R. Bayyari, Janice M. Balog, William E. Huff: Identification and characterization of Interleukin-6 in chicken ascites fluid.

38. Amer N. Silim, Daniel Venne, Diane Frenette: Quantitatin of antibodies in hens, yolks, chicks and residual yolk in chicks at day of hatching by ELISA.

39. Vaithianathan Sivanandan, David A. Halvorson, Sally Noll: Nutritional immune modulation of normal and immunocompromised chickens.

40. Henry D. Stone: In ovo vaccination of chick embryos with experimental NDV oil emulsion vaccines.

41. Chinta M. Lamichhane, J. Hale, R. P. Chin, S. K. Hietala, M. Blankfard, T. Isakson: Development of a highly specific and sensitive ELISA for the detection of antibody to turkey Coryza.

42. Sudhir K. Reddy, Pratik Singh, Amer N. Silim, John Newman: Immunological characterization of mycoplasmal antigens.

43. Jean E. Sander, Tiande Cai: Biochemical characteristics of poultry carcasses during fermentation.

44. Martine Boulianne, E. James Squires, Richard J. Julian: Effect of chronic ante mortem hypoxia on meat coloration of broiler chickens.

45. Javier Martinez, Perry L. Habecker, Sherrill Davison, Robert J. Eckroade, Charles E. Benson: Ovarian adenocarcinoma in a backyard layer flock.

46. Davis J. Myers, Robert A. Heckert, Lorne Jordan: The diagnosis and incidence of foreign avian diseases in Canada 1983-1993.

47. Loyd D. Rowe, Ross C. Beier, Magdy I. A. El-Aziz Nasr, Marcel H. Elissalde, Larry H. Stanker: Detection of the avian coccidiostat halofuginone in chicken serum by a monoclonal-based immunoassay.

48. Jean-Pierre Vaillancourt, Scott Gillingham, Lloyd Weber, Helen Wojcinski, Conrad Van Dijk, Nathaniel Tablante, Mike Joyce, Arpy Ferencz, Path Mahattan: The Poultry Study Group: A partnership in continuing education.

49. Marcel H. Elissalde, Ross C. Beier, Loyd D. Rowe, Larry H. Stanker: A monoclonal-based Elisa for salinomycin in poultry liver.

50. Thaddeus K. Graczyk, Michael R. Cranfield, Clive J. Shiff: Development of a serologic diagnostic test for avian malaria.

51. Thaddeus K. Graczyk, Michael R. Cranfield, Melvin L. Shaw, Clive J. Shiff: Hematologic characteristics of avian malaria cases in African black-footed penguins (Sphjeniscus demersus).

52. Akbar Ali, Donald Lee Reynolds: Primary cell culture of turkey poult intestinal epithelial cells.

53. John W. Latimer, Michael L. Perdue, Joan Beck: Sequence analysis & detection of influenza A sub-populations.

54. James S. Guy, John Barnes, Lynda G. Smith, Meliton N. Novilla: Myocarditis, cardiomegaly, and ascites are sequellae of experimentally-induced alphavirus infections in chickens.

55. Daniel Weinstock, James S. Guy, M. Mitsu Suyemoto, H. John Barnes: Alterations in immune response of turkey poults due to infection with alphavirus (EEE or HJ virus).

56. Carol J. Cardona, Keyvan Nazerian, Noboru Yanagida, Willie Reed: Molecular characterization of the nexon gene of hemorrhagic enteritis virus.

57. Lloyd H. Lauerman, Phillip H. Klesius: Fast Elisa for diagnosis of infectious bronchitis virus.

58. Gloria E. Avellaneda, Pedro N. Villegas, Mark W. Jackwood: In vivo recombination of infectious bronchitis virus.

59. Reynaldo S. Resurreccion, Martin A. Smeltzer: Detection of infectious bronchitis antigen in inoculated embryonating eggs and infected broilers.

60. Vinay K. Dhama, Frederick S.B. Kibenge: Functional characterization of VP1 of infectious bursal disease virus.

61. Malliga M. Nagarajan, Frederick S.B. Kibenge: Analysis of terminal sequences of serotype 2 infections bursal disease virus genome segments A and B: A comparison with serotype 1 strains.

62. Stephanie A. Mengel-Whereat, David B. Snyder: Characterization of lethal and highly pathogenic strains of IBDV with monoclonal antibodies.

63. Alan P. Avakian, Peter Wyeth, Craig E. Whitfill, Catherine A. Ricks, Eid H. Haddad, Nick Chettle: Development of immunity in broilers to IBDV following in ovo vaccination with a novel live IBDV vaccine (BDA-IBD-BLEN).

64. Tom P. Brown, Pedro N. Villegas, Phil D. Lukert: Pathogenicity of serotype 2 IBD virus and coronavirus isolated from turkey poults.

65. Claudia M. Marin, Pedro N. Villegas: Pathogenicity of field isolates of Newcastle disease virus.

66. Damavarapu N. Reddy, David E. Junker, Jr.: Protective immunity induced by a recombinant fowlpox vaccine virus expressing Newcastle disease virus glycoproteins.

67. Anwar D. Maraqa, Donald L. Reynolds: The determination of those proteins of Newcastle disease virus involved in the cellular immune response.

68. Masoud S.A. Shapouri, Diane Frenette, Ali Kheyar. Amer Silim: Studies of the biological role of sigma B protein of avian reovirus using IgG monoclonal antibodies (MAbs)

69. Manuel E. Colmenares, Morella DeRosa, Gladys Medina, Juliet Siger: Isolation of the Venezuelan equine virus in broiler chickens exhibiting signs of nervousness.

1994 AAAP Symposium

RESPIRATORY DISEASES OF BROILERS AND TURKEYS

SESSION 1: AVIAN RESPIRATORY SYSTEM IN HEALTH AND DISEASE

8:30 **Anatomy and Physiology of the Avian Respiratory System** M. R. Fedde

9:00 **Avian Respiratory Defense Mechanisms, Injury and Repair.** Martin Ficken

9:25 **Avian Respiratory Immunity and Immunosuppression.** Jagdev Sharma

9:50 **Panel Discussion**

10:00 **BREAK**

SESSION 2: SELECTED VIRAL RESPIRATORY PATHOGENS

10:30 **Biology and Epidemiology of Infectious Bronchitis** David Cavanaugh

11:00 **Newcastle Disease: Still a Worldwide Threat to Poultry** Daniel J. King

11:15 **Virulence Assessment of Avian Influenza Virus** Max Brugh

11:30 **Current Understanding of the Infectious Laryngotracheitis Problem** James Guy

11:45 **Panel Discussion**

12:00 **LUNCH**

SESSION 3. SELECTED BACTERIAL AND TOXIC RESPIRATORY PATHOGENS

1:30 **Pathogenesis of Escherichia coli and Pasteurella multocida Infections in Poultry.** H. John Barnes

2:00 **Pathogenesis of Bordetella avium Infections.** J. Kirk Skeeles

2:15 **Infectious Coryza: An Emerging Disease in Broiler Production** John Glisson

2:30 **Environmental Respiratory Pathogens: Poultry House Gases and Dust.** Jean Sander

2:45 **Panel Discussion**

3:00 **BREAK**

SESSION 4. ECONOMIC IMPACT AND MANAGEMENT OF RESPIRATORY DISEASE

3:30 **The Economics of Respiratory Disease in Poultry Meat Production** Calvin Anthony

3:50 **The Influence of Breeder and Hatchery Management on Respiratory Disease** Donna Hill

4:10 **Current Management for the Prevention and Control of Respiratory Disease in Broilers** Leonard Fussell

4:30 **Current Management for the Prevention and Control of Respiratory Disease in Turkeys** Speaker not confirmed as of 15 Nov.

4:50 **Panel Discussion**

5:00 **Adjournment**

AWARD NOMINATIONS

Enclosed please find the nomination requests for the awards to be presented at the 1994 AAAP meeting. Please help your association find the deserving members for these awards. Without your help, this process does not work and many deserving members go unrecognized.

Nominations and <u>all</u> supporting documentation (5 copies) must be <u>received</u> by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.

GLENN SNOEYENBOS NEW INVESTIGATOR AWARD

The American Association of Avian Pathologists will annually select a member or associate member to be the recipient of the "New Investigator Award".

The award shall be in the amount of $1000.00 plus travel expenses to the American Veterinary Medical Association's Annual Meeting.

Nominations for the New Investigator Award will be accepted from any member of the AAAP . This award will be given to a AAAP member or to an associate member whose career as an independent investigator in poultry medicine began within the last 7 years and who, during this time, has made meritorious research contributions to the avian field. The spirit of this award is to recognize new and upcoming investigators. This award will be given for special accomplishments in a particular area of investigation or for overall accomplishments during the specified time. This award shall not be made more than once to any one recipient.

The list of nominees will be kept confidential by the committee. Unsuccessful nominations will not be carried over from one year to the next but can be resubmitted.

The nomination should be accompanied by <u>five</u> copies of each of:
(1) a biography, (2) pertinent bibliography, (3) reprints of up to five most significant publications, and (4) no more than two seconding letters.

Nominations and <u>all</u> supporting documentation (5 copies) must be <u>received</u> by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.

UPJOHN ACHIEVEMENT AWARD

Nominations will be accepted from AAAP members for the Upjohn Achievement Award (UAA). These nominations should contain sufficient information for the Awards Committee to evaluate recent achievements of any individual who is currently listed as a member (any category) of the AAAP and who has made outstanding contributions to the field of research as related to the activities of avian medicine. Contributions published in scientific journals will constitute important documentation in support of the nominee.

This award is not to be given as a recognition of lifetime service unless a substantial significant portion of that service should represent accomplishments during the 7 years preceding the annual award. Furthermore, the award is not given for a particular piece of research, but for accomplishment during a definite time span; this time is limited to 7 years in order not to penalize younger individuals. The award shall not be given more than once to a recipient.

The nomination should be accompanied by <u>five</u> copies of each of: (1) a biography, (2) pertinent bibliography, (3) reprints or copies of no more than 10 of the most significant publications, and (4) no more than one seconding letter.

Further documentation will be accepted by the Awards Committee only if specifically requested by the Committee. The list of nominees will be kept confidential by the Committee but dossiers will be returned to the individual submitting the nominations after the awards have been made if requested.

Nominations and <u>all</u> supporting documentation (5 copies) must be <u>received</u> by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.

C. A. BOTTORFF AWARD

Nominations will be accepted from AAAP members for the C. A. Bottorff Award. The purpose of this award is to recognize an avian diagnostician/technical service veterinarian who has contributed significantly to the poultry health programs in North America in the past ten years. The recipient must be a veterinarian, a member of the AAAP and may be affiliated with government agency, academia or industry. The criteria for selection of the recipient are:

1. *Primary involvement in avian diagnostic work and/or technical service to poultry industry in the past ten years (laboratory and/or field work).*
2. *Demonstration of sincere concern and effort to identify and resolve the poultry industry's flock health problems.*
3. *Documentation of significant contribution to the poultry industry.*

The award shall be in the amount of $1,000 plus travel expenses, if necessary, to the American Veterinary Medical Association's meeting. The nomination should be accompanied by <u>five</u> copies of the following:

1. *A brief sketch outlining the number and length of professional positions and the activities associated with those positions.*
2. *An estimate of the portion of his/her career which has been devoted to avian diagnostics.*
3. *A brief description of the nature of the activities thought to constitute evidence of being an outstanding diagnostician.*
4. *A list of awards or honors indicative of prior recognition of service to the poultry industry.*
5. *Statements pertaining to: a) special qualifications of the nominee, and b) the impact the individual has made on the poultry industry at the local, national and international level.*
6. *Letters of support from three individuals familiar with the total contributions of the individual to the poultry industry.*

The list of nominees will be kept confidential by the committee. Unsuccessful nominations will not be carried over from one year to the next but can be resubmitted.

Nominations and <u>all</u> supporting documentation (5 copies) must be <u>received</u> by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.

SPECIAL SERVICE AWARD

Nominations will be accepted from AAAP members and should consist of sufficient information to permit comparative evaluation by the Awards Committee. The award shall be in the amount of $1,000 plus travel expenses, if necessary, to the American Veterinary Medical Association's meeting. The nomination should be accompanied by five copies of the following:

1. *A Brief sketch outlining the number and length of professional positions and activities associated with those positions.*
2. *A listing of memberships in, and activities in support of, professional organizations important to the field of avian medicine.*
3. *An estimate of the portion of the career which was devoted to activities in the field of avian medicine.*
4. *A brief description of the nature of the activities thought to constitute special service to the field.*
5. *A listing of any awards or honors indicative of prior recognition of service to colleagues and to the field in general.*
6. *Special supportive material pertinent to the particular area of service (e.g. a bibliography would be suitable for a nominee whose contributions has been largely in the area of research).*
7. *A statement pertaining to any special qualifications of the individual for this award with particular emphasis on the impact the individual has had on others in the field at the local, national and international level.*

Further documentation will be accepted by the Awards Committee only if it is specifically requested by the Committee. This list of nominees will be kept confidential by the Committee. Unsuccessful nominations will not be carried over from one year to the next but could be resubmitted.

Nominations and all supporting documentation (5 copies) must be received by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.

LIFE MEMBERSHIP

Nominations will be accepted from AAAP members for Life Membership.

A category of membership to which charter members, members and associate members, upon entering retirement, may be elected following nomination. In order to be considered for life membership, a person must have made significant contributions to the field of avian pathology and to the American Association of Avian pathologists and shall have been active in the field a minimum of 25 years. Life members shall not be required to pay any dues of assessments.

Retirement is interpreted to mean that the member or associate member has retired from major gainful employment.

HONORARY MEMBERSHIP

Nominations will be accepted from AAAP members for Honorary Membership.

Scientists who have made unusually significant contributions to the field of avian pathology. Not more than two honorary members shall be selected in any one year. An honorary member shall not be required to pay any dues or assessments.

Nominations for election as life members and honorary members shall be submitted to the Awards Committee, approved by the Awards Committee and approved by a two-thirds vote of the Governing Board of the Association.

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Nominations and all supporting documentation (5 copies) must be received by April 15, 1994. Nominations and materials received after this date will not be considered. Send to Dr. Bruce Stewart-Brown, 1201 Northland Drive, Mendota Heights, MN 55120-1139.