

Life Disease Association/  
The American Association  
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Educational Aids

Graduate Training Bulletin

Promotions

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## MISCELLANEOUS

**A Case of Super-infection of *Taenia krabbei* in a Moose.** On November 10, 1986, a yearling bull moose was submitted to the Alberta Fish and Wildlife Division. The hunter claimed the meat was "loaded with watery blisters and was not fit to be eaten by anyone in his right mind." Examination of the carcass revealed cysticerci of *Taenia krabbei* throughout ALL skeletal muscles, including those of the face and ears. Thin slices of muscles of the hindquarters and forequarters usually revealed 20 to 50 cysticerci in each cut. The larvae appeared to have an affinity for connective tissue fascia between and within muscle bundles. The density of the infection appeared slightly greater in the hindquarters. Additional cysticerci were found throughout the lingual (5 cysts per 1/2" slice, total 120), cardiac (approximately 1 cyst per cubic centimeter, total 2,000), masseter (total 1,000), and diaphragmatic muscles (only a small portion of the diaphragm was examined). The cardiac estimate includes cysticerci in the endothelial lining and on the tricuspid and mitral valves. Connective tissue of the peritoneum (pleural and abdominal), peri-oesophageal, sublingual, and peri-testicular regions also contained cysticerci. A few (<5) cysticerci were found on the rectus muscles of the eyes. One cysticercus was found in the subarachnoid space on the ventral surface of the cerebrum adjacent to the optic chiasma. Unfortunately the viscera were not available for examination.

Given a conservative estimate of 0.5 cysticerci per cubic centimeter of muscle, a muscle to bone ratio of 65% (Wyo. Agric. Exp. Sta. Tech. Bull. #594), and a dressed weight of 135 kg (average for yearling moose), this individual harboured at least 50,000 cysticerci of *Taenia krabbei*. *Taenia krabbei* (in dogs) has a tendency to de-strobilate in series of up to 150 proglottids, each containing an average of 19,200 mature eggs (Sweetman and Henshall, Can. J. Zool. 40: 1292, 1962). Thus, it is not unreasonable to suggest that this heavy infection could have resulted from a single exposure.

Despite the tremendous number of cysticerci present, the moose was in relatively good body condition. The carcass was well fleshed-out and there was little or no direct pathological damage associated with the cysts. The hunter reported that the animal behaved "normally" in the field and did attempt to avoid being shot. However, there is no doubt that the animal's stamina for prolonged exertion must have been low.

Oh yes, the hunter was given authorization to try to take another moose for his freezer! *Margo Pybus, Canada Fish and Wildlife Division.*

**National Wildlife Health Center Quarterly Mortality Report.** The following summarizes migratory bird mortalities reported by NWHC for July-September 1986.

Avian botulism was reported in 15 states, with estimated losses of 30,000 waterfowl and shorebirds in Montana and North Dakota alone. Investigation of concurrent outbreaks revealed that in addition to a drop in water level and high temperatures, other contributing factors included water alkalinity from surrounding soils, release of sewage effluent into source waters, and possibly exposure of birds to toxins. Several alternative water management and control activities were recommended following site visits to four locations.

The disappearance within 4 days of all adults from a rookery in Utah containing 50 nesting pairs of black-crowned night herons, snowy egrets, and cattle egrets remains a mystery. The offspring of these birds, ranging in age from hatchlings to fledglings, were found dead in their nests. The carcasses were too autolyzed to be of any value in the investigation.

Following isolation of duck plague virus from birds on a residential pond and spread of the virus to birds on a nearby lake in Burke, Virginia, depopulation and environmental decontamination were carried out. After the 441 resident ducks, geese, and swans were euthanized, the pond water was neutralized, then drained and the lake water was lowered and the surrounding ground was treated. Brush and ground litter were removed and the soil was treated with Environ-D. An effort was made to locate and monitor all ducks removed from the area prior to the outbreak and also to discourage new

birds from coming into the area. Follow up virological testing of birds from this site and surrounding areas was negative. A similar protocol was used following another duck plague outbreak during June at a small zoo in Indiana.

Immature black skimmers died of exposure and dehydration in Freeport, Texas following 3 weeks of ground temperatures ranging up to 116°F. Adults had nested in a fenced-in parking lot surfaced with crushed seashells. There was no vegetation present for shade and water was not available nearby.

No source was identified for *Chlamydia psittaci* isolated from gulls found dead on an island in North Dakota. Continued surveillance of the island and surrounding areas indicated no further mortalities. The island was closed to recreational use and no human cases of chlamydiosis were reported. *Kathryn Converse, NWHC.*

**Please send all items for the *Wildlife Disease Newsletter* to: W. R. Davidson, School of Forest Resources, The University of Georgia, Athens, Georgia 30602, USA. The *Wildlife Disease Newsletter* is non-refereed and items contained in the *Newsletter* may not be acceptable as and should not be cited as published material.**

## QUARTERLY DIE-OFF REPORT

July 1986–September 1986  
National Wildlife Health Center

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outbreak during June

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Location	Date	Principal species	Mortality	Principal cause of mortality
Burke, VA	6/86–7/20/86	Muskovies, pekings	40–50	DVE
Culpepper, VA	6/12/86–6/13/86	Mallards	45	Avian botulism
Richfield, MN	7/09/86–7/29/86	Mallards	75	Avian botulism
Bridgeport, WA	6/03/86–6/06/86	Mallards, Canada geese	10	Undetermined
Lower Klamath NWR, CA	6/12/86–9/04/86	Mallards, pintails, grebes, gulls	3,065	Avian botulism
Caballo Lake, NM	7/14/86–7/14/86	Snowy egrets	100	Emaciation
Reno, NV	7/07/86–7/25/86	Mallards	135	Avian botulism, toxin suspect
Freeport, TX	7/20/86–7/20/86	Black skimmers	301	Exposure, dehydration
Lexington, KY	7/07/86–7/25/86	Mallards, domestic mal- lards	151	Avian botulism
Horicon NWR, WI	6/25/86–10/01/86	Ducks, gulls, yellowlegs	30	Avian botulism
Medicine Lake NWR, MT	7/20/86–9/15/86	Waterfowl, shorebirds	7,000	Avian botulism
Arlington Heights, IL	7/01/86–8/01/86	Mallards	50	Avian botulism suspect <sup>1</sup>
Long Lake NWR, ND	7/22/86–9/07/86	Ducks, shorebirds	9,300	Avian botulism
Dayton, OH	7/14/86–7/16/86	Mallards, shorebirds	17	Avian botulism
Elizabeth River, VA	7/21/86–7/28/86	Mallards	6	Avian botulism
St. Paul Island, AK	7/31/86–8/18/86	Murres, shearwaters, kitti- wakes	18	Emaciation, starvation
Lake Winnebago, WI	8/12/86–8/28/86	Mallards	12	Avian botulism
New Town, ND	7/05/86–8/15/86	Ring billed gulls, Frank- lin's gulls, California gulls	500	Chlamydia
Humboldt WMA, NV	8/01/86–8/08/86	Gulls, mallards, pintails, teals	50	Avian botulism, undeter- mined
Mud Lake, ID	8/02/86–8/11/86	Sage grouse	50	Organophosphate
Market Lake WMA, ID	8/06/86–8/25/86	Ducks, American coots, grebes, other	671	Avian botulism, lead poi- soning
Denver Zoo, CO	6/86–9/86	Mallards, wood ducks, Canada geese	500	Avian botulism and Bay- gon toxicity
J. Clark Salyer NWR, ND	8/08/86–8/24/86	Ducks, coots, shorebirds	16,500 (e)	Avian botulism
Cleveland, OH	8/06/86–10/16/86	Shorebirds, sandpipers, lesser yellowlegs	1,000	Avian botulism
Waubay NWR, SD	7/25/86–9/11/86	Ducks, coots	4,344 (e)	Avian botulism
American Falls Res- ervoir, ID	8/19/86–8/27/86	Canada geese	10	Necrotic esophagitis
Delevan NWR, CA	9/22/86–ongoing	Mallards, pintails, coots	694	Avian botulism
Sacramento NWR, CA	8/20/86–ongoing	Ducks	834	Avian botulism
Vernal, UT	8/27/86–8/27/86	Snowy and cattle egrets, b. crowned night her- ons	1	Open <sup>1</sup>
Devil's Lake WMD, ND	8/14/86–9/15/86	Mallards, gadwalls, Ameri- can coots, other	410	Avian botulism
City of Chesapeake, VA	9/29/86–9/29/86	Pekins, mallards	3–4	Lead poisoning
Hale Center, TX	9/27/86–10/14/86	Teals, pintails	140	Avian botulism
Edina, MN	7/10/86–7/29/86	Mallards	18	Avian botulism suspect <sup>1</sup>
St. Paul, MN	9/04/86–9/10/86	Mallards	29	Avian botulism

<sup>1</sup> Carcasses not examined.

e = estimated mortality.

For specific information, contact the following Resource Health Team members: Pacific Flyway—Kathryn Converse, Central Flyway—Ronald Windingstad, Mississippi Flyway—Chris Franson, Atlantic Flyway—Tom Roffe.

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