

## Ontario

### Newcastle disease in cormorants

Newcastle disease is caused by a paramyxovirus type 1 and can affect many avian species. Newcastle disease in wild birds has occurred several times in Canada. In 1975, there was an outbreak of Newcastle disease in wild waterfowl in Quebec, and in 1990, there was an outbreak in cormorants in Saskatchewan (Wobeser *et al*, unpublished observations).

During the summer of 1992, unusually high mortality in cormorants was observed in Saskatchewan, Manitoba, Ontario, and New Brunswick. The high mortality was observed in young birds in rookeries, and adult birds were seen exhibiting wing and leg paralysis and abnormal neurological signs. From July to October, tissues from affected birds in every province except British Columbia and Newfoundland were sent for Newcastle disease virus diagnosis to Agriculture Canada, Animal Diseases Research Institute, Nepean, either directly or through local provincial veterinary laboratories or veterinary colleges.

In total, 22 samples from wild birds (cormorant, gull, kestrel, and owl) were submitted as suspected Newcastle disease. From these samples, paramyxovirus type 1 was isolated from seven submissions of cormorants: three from Saskatchewan, one from Manitoba, and three from Ontario. The strain of a viral isolate was determined by the mean death time in eggs, the intravenous pathogenicity index in four to six-week-old chickens, and the intracerebral pathogenicity index in day-old chicks, as described by Alexander (1). The pathogenicity indices for all of the isolates were in the high range of the mesogenic group of Newcastle disease viruses. However, several of the isolates, when inoculated into four to six-week-old chickens, caused one hundred per cent of the birds to show severe neurological signs of paresis, imbalance, incoordination, and depression. Considering the severe clinical signs shown by the inoculated birds, four of the seven isolates were classified as neurotropic velogenic.

This 1992 outbreak of Newcastle disease in wild birds was similar to that described in Saskatchewan in 1990 (Wobeser *et al*, unpublished observations) and to the outbreak during the summer of 1992 in the

United States (2). Velogenic and mesogenic Newcastle disease viruses were also recovered from cormorants showing abnormal neurological signs during the 1990 outbreak of Newcastle disease in Saskatchewan. In the United States, a neurological disease with high mortality was detected in young cormorants and pelicans in Minnesota, Michigan, North and South Dakota, and Nebraska. Velogenic neurotropic Newcastle disease virus was isolated from tissues of cormorants from Minnesota and Michigan. A virus with a pathogenicity similar to that of the isolates from the cormorants was also isolated from a flock of 23,000 turkeys in North Dakota. Dead cormorants were found within 15 miles of the turkey farm. Based on biotyping with a panel of monoclonal antibodies, the 1992 Canadian and 1992 U.S. isolates from cormorants were found to be indistinguishable and closely related to the 1990 Saskatchewan isolate from cormorants (Alexander, personal communication).

Paramyxovirus type 1 is likely to be endemic in populations of wild birds and can be exacerbated by various factors. Outbreaks of Newcastle disease, therefore, may reoccur in wild birds on a sporadic basis.

**Cormorants infected with virulent strains of Newcastle disease virus may be a serious threat to domestic poultry if contact is allowed between wild birds and chickens or turkeys. Poultry producers should be aware of this threat and take appropriate biosecurity precautions during the summer months to reduce the possibility of direct or indirect contact with wild birds.**

### References

- Alexander DJ. Paramyxoviridae (Newcastle Disease and Others). In: Jordan FTW, ed. Poultry Diseases, 3rd ed. Toronto: Bailliere Tindall, 1990: 1221-1236.
- Panigraphy B. Isolation of VNDV from cormorants in Minnesota and Michigan. National Veterinary Services Laboratories, USDA, APHIS, VS Newsletter, 1992: Issue 4.

**Robert A. Heckert, Animal Diseases Research Institute, Agriculture Canada, 3851 Fallowfield Road, P.O. Box 11300, Station H, Nepean, Ontario K2H 8P9**

### Impaction in a rhea

Ratites are keelless, flightless birds, such as ostriches, emus, and rheas. Ratite farming, as an alternative farming enterprise, is becoming increasingly popular in many parts of Canada and the United States. Veterinarians have limited experience with these species at this time but can be expected to be approached when disease, management, and other problems arise.

A dead, three-month-old rhea (*Rhea americana*) was submitted to the Ontario Ministry of Agriculture and Food's diagnostic laboratory at Huron Park for

necropsy. It had been anorectic and lethargic for several days prior to its death. It had been housed in a pen with 14 other rheas, neighboring, but not in direct contact with, 12 emus (*Dromaius novaehollandiae*) housed in an adjacent pen. The bird was in fair bodily condition. The gizzard was impacted with numerous large stones, pebbles, one screw, and a piece of glass. This was the second juvenile rhea to have died due to an impaction of the gizzard in recent months. The emus on the same premises were not similarly affected.