News from Europe

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Sweden

In Sweden, a mild winter has had different effects on the wildlife situation in the southern and the northern parts of the country. In the southern part, badgers are coming out of their hibernation earlier than usual, and in the north, the reindeer, although with plenty of food, have faced another outbreak of keratoconjunctivitis which in part might be a result of the warm winter. Another observation is that the tick population is expanding increasingly northward. These ticks may possibly introduce some of the tick-borne diseases we have in the south to the northern populations of moose, deer and possibly reindeer. Some of these ruminants may be naive to exposure to pathogens such as *Anaplasma*, *Borrelia*, and Tick-borne encephalitis virus and it is unclear how they will respond to infection. In addition to the possible health risks to wildlife itself, the wild ruminants may serve as reservoirs for these agents, which have human health implications.

Furthermore, the former Department of Wildlife, Fish & Environment at our National Veterinary Institute (SVA) in Uppsala, Sweden, has since Jan. 1, 2008 been divided, and new departments have been formed. The wildlife section of the former department is now merged with our fellow livestock and pet pathologists, to form the Department of Pathology and Wildlife Diseases. This has resulted in a department with a much deeper and wider expertise in the field of pathology, which we are all very excited about.

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Infection of cats and humans with wild bird strains of *Salmonella* Typhimurium in the UK

Wild bird strains of *Salmonella enterica* serovar Typhimurium, including phage types (definitive types) DT40 and DT56 variant, have been identified in finches and sparrows in the family *Fringillidae* in the United Kingdom (Pennycott et al. 2006). These strains of *Salmonella* Typhimurium were isolated from nine cats with enteric disease in England, Scotland and Northern Ireland from 2003 to 2007 (Philbey et al. 2008). Affected cats were 1 to 14 years of age and had a history of hunting small birds. One cat died and eight cats recovered following treatment with antibiotics after exhibiting dullness, pyrexia, inappetence and diarrhoea, sometimes with dysentery, for 36 hours to 3 weeks. Cats appear to contract infection with these strains of *Salmonella* Typhimurium by hunting small birds that congregate around artificial bird feeding stations during the cooler months of the year. Wild bird strains of *Salmonella* Typhimurium have also been identified as a cause of diarrhoea in humans in Scotland, particularly in children less than 5 years of age.

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Summary of Recent HPNAI H5N1 Activities

Whilst Highly Pathogenic Notifiable Avian Influenza (HPNAI) H5N1 was not detected in any wild birds tested during the course of Avian Influenza Wild Bird Surveillance (AIWBS) activities in Great Britain (GB) during the second half of 2007, HPNAI H5N1 was confirmed affecting ten wild Mute swans (*Cygnus olor*) in South Dorset during January 2008. The carcases were collected from within the Fleet Reserve and the adjacent Dorset coast as part of the EC-mandated AIWBS programme, conducted to provide an early warning of the presence of H5N1 in the EU (European Commission, 2007). Analysis of this most recent HPNAI H5N1 virus indicated that it is related to contemporary viruses from continental Europe, and is most closely related to a cluster of isolates recovered in mid to late 2007 from wild and domestic birds in the Czech Republic, Romania and Poland. No infection has been identified in any other individual or species of wild bird in Great Britain since April 2006, when an infected Whooper swan (*Cygnus cygnus*) was found dead, washed up in Cellardyke harbour in Scotland. A preliminary epidemiology report has been published (Defra, 2008) describing the current incident.

The episode in Dorset provides further evidence that dead wild waterfowl such as swans (*Cygnus* spp.) continue to be good indicator species for the presence of HPNAI H5N1 infection in wild bird populations. The findings from the European surveillance programme during 2006 also reinforced the value of passive surveillance for the detection of these viruses from predominately wild swans found dead across Europe (Hesterberg *et al.,* 2007).

During 2007 three outbreaks of notifiable avian influenza occurred in domestic poultry in Great Britain; HPNAI H5N1 in February (Irvine *et al.*, 2007; VLA, 2007a) affecting a large commercial turkey premises in Suffolk, LPNAI H7N2 affecting backyard poultry in North Wales and Merseyside during May (VLA, 2007b), and during November, a second outbreak of HPNAI H5N1 in free-range, mixed poultry premises in Suffolk. The year also witnessed the familiar temporal and spatial trends of westward global spread of the virus from South East Asia in both poultry and wild birds, including wild bird incursions into and across the European Union (EU) from mid-2007 (VLA, 2007c; FAO, 2008). Molecular and epidemiological studies indicated that these episodes affecting both wild and domestic birds within the EU have been due to a new independent introduction of the HPNAI H5N1; the phylogenetic group of this virus (clade 2.2) comprising a lineage originating from the Middle East and some Russian Federation isolates. It is considered a possibility that the virus may have been introduced into wild bird populations in a number of discrete pockets and maintained at a very low level that remained unnoticed. Spread has continued more recently in domestic birds in Poland and Romania.

A close genetic relationship exists between these contemporary viruses from wild and domestic bird populations isolated within Europe since June 2007. Furthermore, a likely

hypothesis for the primary introduction of HPNAI H5N1 virus resulting in the poultry outbreak in Suffolk during November 2007 and the current wild bird incident in Dorset is via contact of the respective free-range turkey and sedentary wild Mute swan populations with infected wild birds, most likely migratory species from central Europe (Defra, 2007a; Defra, 2008). It is also considered likely that the progenitor virus of the HPNAI H5N1 outbreak in Suffolk during February 2007 was introduced to Hungarian domestic poultry by wild bird contact (Defra, 2007b).

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MedVetNet, Special Interest Group on WiREDZ (Wildlife Related Emerging Diseases and Zoonoses). Anyone investigating wildlife diseases anywhere in Europe please contact Paul Duff- **p.duff@vla.defra.gsi.gov.uk** .

European Section

Material for publication in *News from Europe* can include recent wildlife disease outbreaks and new diseases in Europe, short case and meeting reports; job and scholarship announcements. We encourage submissions, and will help with the English language if required. The deadline for the next issue is May 2008.

Please mail, fax or e-mail submissions to, Paul Duff, VLA Diseases of Wildlife Scheme, VLA Penrith, Merrythought, Calthwaite, PENRITH, Cumbria, CA11 9RR, United Kingdom, *e-mail* p.duff@vla.defra.gsi.gov.uk. *Fax* ++44(0)-1768-885314 /phone ++44(0)-1768-885295.