



The image shows a screenshot of an ABC News website article titled "Sparrow disease". The article text includes: "Health and biosecurity authorities are on the alert for another mass sarambia in the state's sparrows", "About 100 that last year's outbreak", "There were concerns that the new low-level strain, Sarambia Typhimurium 191, had been passed on to humans but there has been no proof", "The Primary Industries and Health Departments are now conducting an epidemiological study and they are asking for public input", "Birds that are being caught look out for any large increase or decrease in their local sparrow population since last year", "Any mass bird deaths should also be reported to the Primary Industries Department". A text overlay on the right side of the article lists: "1979 – Canada", "1979, 2010 – UK", and "2000 – New Zealand". The right sidebar contains "TOP STORIES" with various news items.

November 2016

- Over one month, approximately one house sparrow per day and occasional other avian species were found sick and dead on a property in North Melbourne (~40 cases)
- No specific clinical signs noted.
- AgVic received one sparrow which was euthanased and two frozen carcasses – a sparrow and spotted turtle dove

Slide courtesy of Mark Hawes

Gross pathology



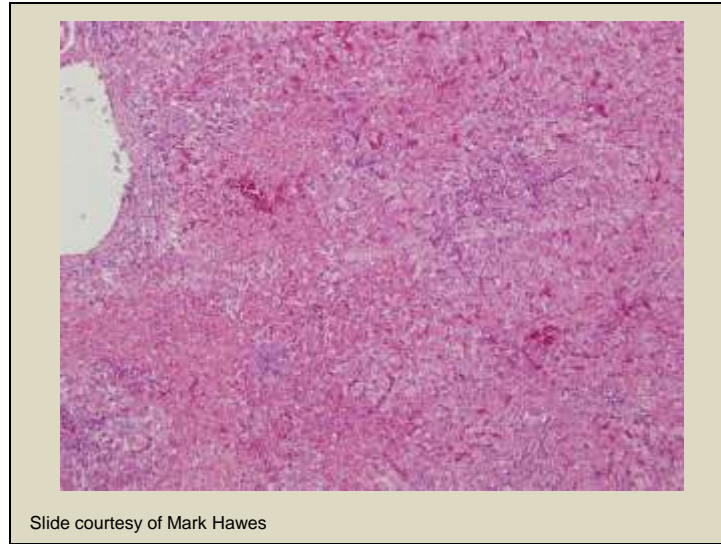
- Multifocal to coalescing dark red discolouration (haemorrhage) on the mucosa and serosal surfaces of entire intestinal tract.

- Enlarged friable liver with poorly demarcated variably sized pale foci.
- Enlarged spleen



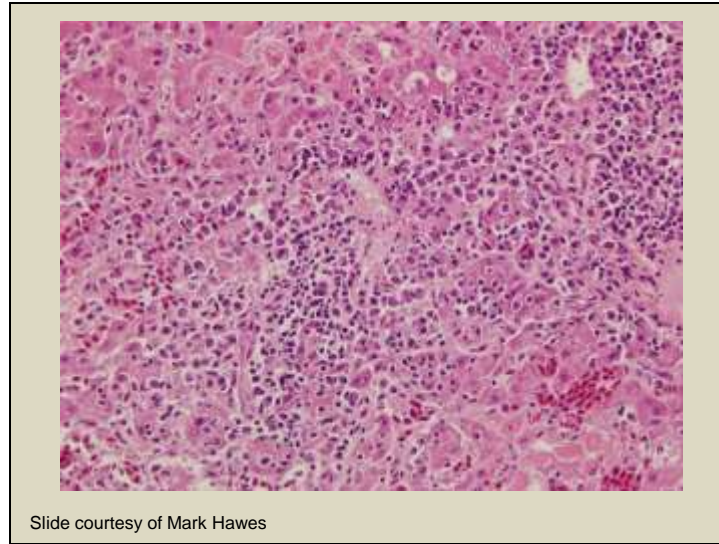
Slide courtesy of Mark Hawes

Slide 5



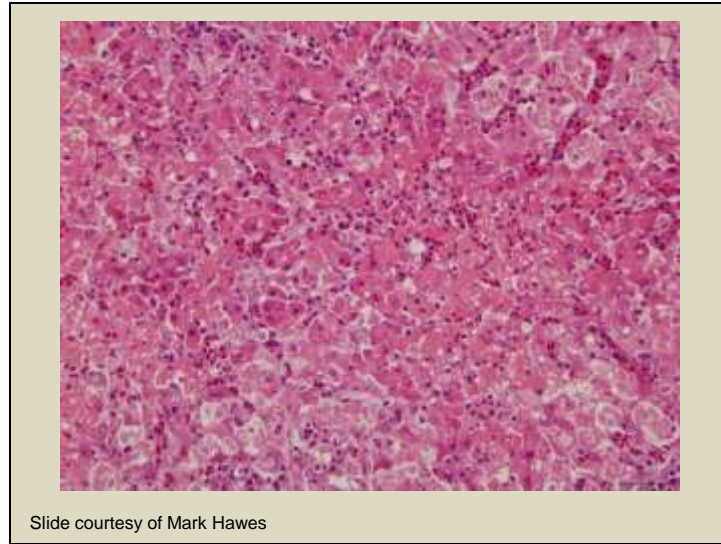
Hepatocellular necrosis

Slide 6



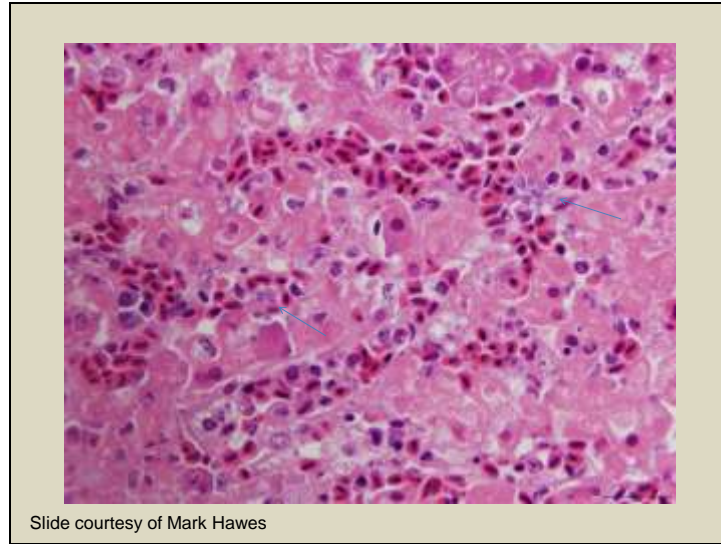
Hepatocellular necrosis and mononuclear inflammation

Slide 7



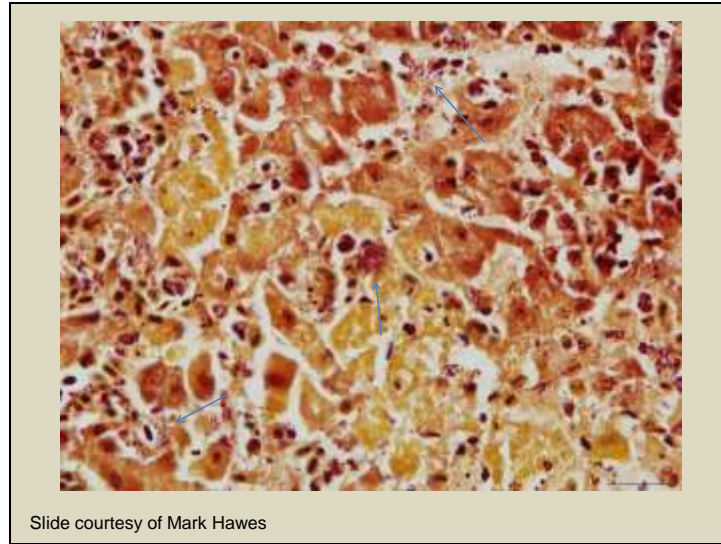
Hepatocellular necrosis

Slide 8



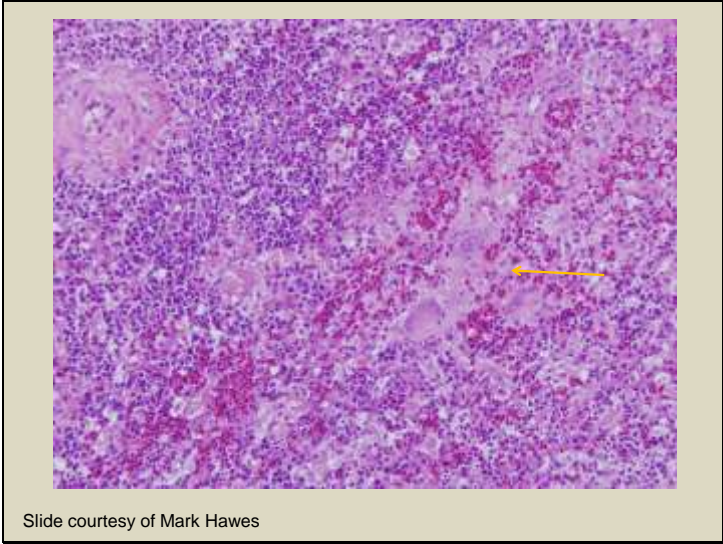
Short rods consistent with *Salmonella* identified on H&E.

Slide 9



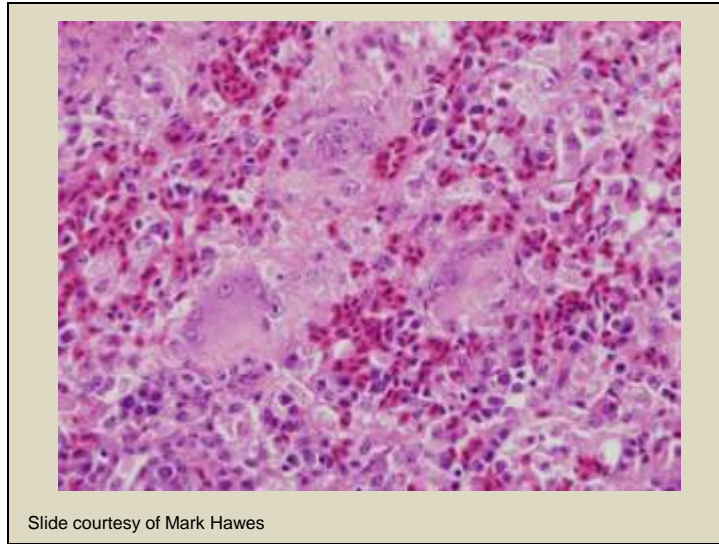
And the same tissue stained with Gram further highlights the bacteria.

Slide 10



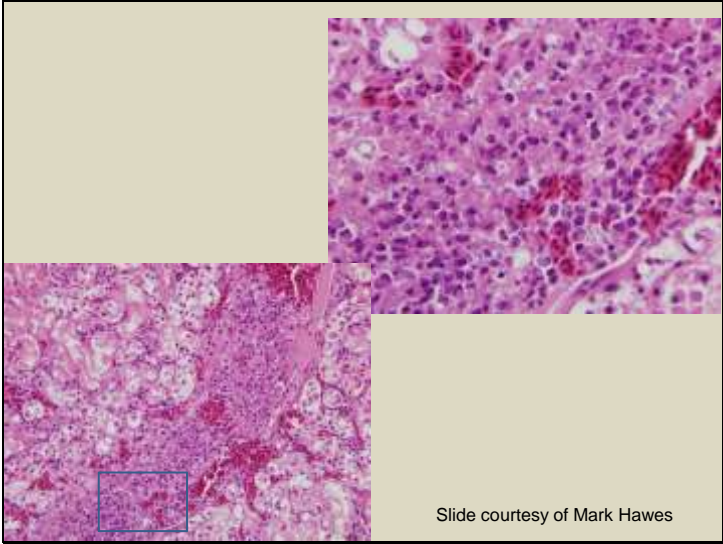
Giant cell formation in the spleen

Slide 11

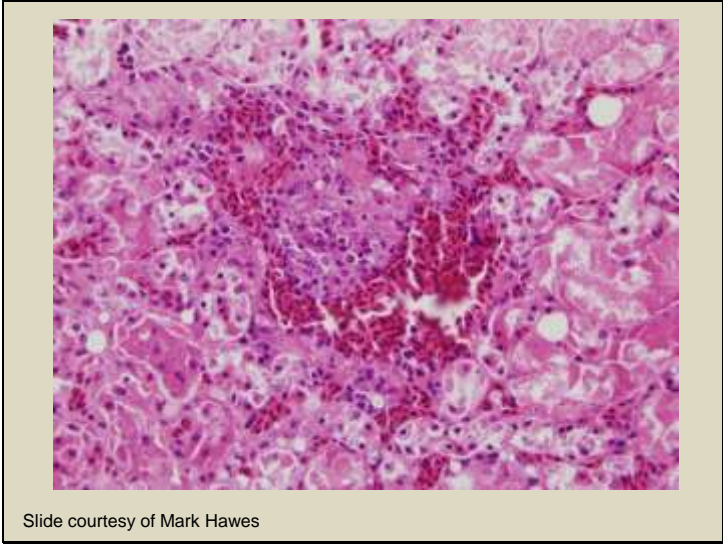


Giant cell formation in the spleen

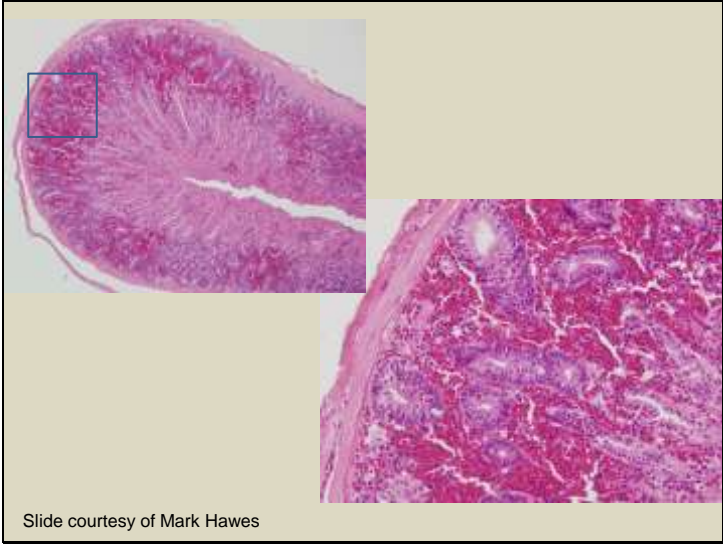
Slide 12



Vasculitis in the kidney



Slide 14



Small intestinal mucosal haemorrhage

Microbiology

Bacteriology

- Salmonella serogroup B isolated from the liver of all three birds.
- Identified as *Salmonella* Typhimurium DT160 at MDU (University of Melbourne).

Molecular

- Pan-Chlamydia PCR – negative
- Avian influenza / Newcastle Disease PCRs - negative

Slide courtesy of Mark Hawes

Diagnosis is by culture of liver, spleen, intestine and crop of freshly dead birds. Faecal culture from subclinically affected birds is also possible.



Necrotizing ingluvititis

Slide 17



Renal necrosis; liver and spleen are also often grossly affected.

Slide 18



Necrotizing colitis

Slide 19



Image credit: Gary Wobeser

Focal encephalomalacia

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Disease is associated with bird feeders in N America (faecal-oral transmission)

Salmonella Typhimurium DT160

- Identified from sick and healthy house sparrows in North America and Europe
- Diagnosed as the cause of mass mortalities in NZ (2000) and Tasmania (2009).
- Has become a cause of human salmonellosis in NZ and Tasmania.
- Humans on mainland Australia diagnosis with Salmonellosis due to *Salmonella* Typhimurium DT160 have, to date, been traced back to travel in NZ / Tasmania.

Slide courtesy of Mark Hawes

Salmonella
Typhimurium DT160

Other species affected in Tasmania

- Birds – silvereeye, sulphur crested cockatoos, chicken
- Livestock – sheep
- Pets – cat
- Wild mammals – wombat

Slide courtesy of Mark Hawes

References

- Alley *et al.* (2002) An epidemic of salmonellosis caused by *Salmonella* Typhimurium DT160 in wild birds and humans in New Zealand. *NZVJ* 50:170-176
- WHA Factsheet
[https://www.wildlifehealthaustralia.com.au/Portals/0/Documents/FactSheets/Avian/Salmonella%20Typhimurium%20DT160%20in%20House%20Sparrows%20in%20Australia%20Dec%202013%20\(2.3\).pdf](https://www.wildlifehealthaustralia.com.au/Portals/0/Documents/FactSheets/Avian/Salmonella%20Typhimurium%20DT160%20in%20House%20Sparrows%20in%20Australia%20Dec%202013%20(2.3).pdf)

Acknowledgements

Salmonellosis IN HOUSE
SPARROWS

Mark Hawes