

## Australian Registry of Wildlife Health

The following are some interesting cases that have passed through the Registry recently. These reports originate from free-ranging animals, and native fauna held in a variety of zoos, fauna parks and private collections.

### February 2007

- Metallic Starling - captive, NSW - The bird presented not using the right foot but no abnormalities were detected. The following day the bird was gasping and recumbent and therefore euthanasia was elected. Necropsy revealed an enlarged spleen and liver and the entire left lung was filled with an exudative material. Histopathology showed a necrotizing pneumonia with intralesional *Aspergillus*-like fungal hyphae. (5649.1)
- Noisy Pitta - captive, NSW - This bird was found lethargic after a cold wet night and moved to a hot box where it died. Necropsy revealed multiple subcutaneous haemorrhages and histopathology revealed peracute periportal to mid-zonal hepatocellular degeneration. These findings are suggestive of possible rodenticide toxicity. (5636.1)
- Diamond Firetail Finch - captive, NSW - This bird was found dead in the aviary. Necropsy revealed a thin bird with a slightly mottled liver. Histopathology showed widely disseminated bacterial emboli (gram positive cocci) within multiple organs suggestive of a bacteremia. (5620.1)
- Superb Parrot - captive, NSW - This bird was being treated for over a month for weakness and a suspected respiratory infection before being found dead. Necropsy revealed pallor and enlargement of the right side of the cerebrum. Preliminary histopathology suggests that this bird had an oligodendroglioma in the brain. (5625.1)
- Red-rumped Parrot - captive, NSW - This bird was acquired from a private pet shop in May of 2006. Feathers were noted to be abnormal in August and became progressively worse over time. Psittacine Beak and Feather Disease (PBFD) was suspected and the bird was euthanased. This bird had abnormal feathers over the entire body and wings. The bird had a positive Circovirus antibody titre of 20,490 and was PCR positive for BFDV DNA. Histopathologic changes in the feather follicles were also consistent with PBFD. (5637.1)
- King Quail - captive, NSW - This bird presented with panophthalmitis of the right eye. The bird was euthanased due to poor prognosis. Histopathology revealed extensive inflammation of all parts of the eye and larvae within the iris. There was also multifocal granulomatous hepatitis with rare intralesional acid fast bacilli suggestive of *Mycobacteria spp.* (5630.1)
- Ringtail Possum - captive, NSW - This was a wild born possum that entered captivity in November 2006 after being hand raised. He was suddenly found dead with no previous clinical signs. Necropsy revealed marked autolysis with pin point white foci scattered over the liver. Histopathologically the possum had multifocal necrotising hepatitis and focal neutrophilic myocarditis and myocardial degeneration suggestive of a bacterial septicaemia. (5641.1)
- Tasmanian Devil - captive, NSW - Two mammary tumours were surgically excised and submitted for histopathology. One was a solid tubulopapillary adenoma and the second cystic mass was locally extensive glandular and ductal cystic hyperplasia. Both lesions are benign and completely excised. (4520.2)
- Long-nosed Potoroo - captive, NSW - This animal was admitted for a swelling on the left hind foot that was lanced and thick pus was expressed. Over the course of 10 days the animal developed

more swellings extending up the leg and acid-fast bacilli were isolated from the pus. The animal was euthanased. Necropsy revealed enlarged peripheral lymph nodes along the left hind leg including the inguinal lymph node. The internal organs were normal. Histopathology revealed granulomatous inflammation in the skin and necrosis of lymph nodes with intralymphatic acid-fast bacteria suggestive of Mycobacteriosis. (5628.1)

- Common Tree Shrew - captive, NSW - This animal presented for lethargy and incoordination. A large abdominal mass was found during exploratory laparotomy and euthanasia was elected. Necropsy showed that the abdominal mass was attached to the left kidney, urinary bladder and right ureter. Histopathologically this mass was a renal lymphoma. (4587.2)
- Guinea Pig - captive, NSW - This animal presented for diarrhoea, dyspnea and apnoea. A large amount of air was removed from the GIT with a needle but the animal died. Necropsy revealed an overweight animal with segmental hemorrhagic contents in the jejunum. *Salmonella bovismorbificans* was isolated. Histopathology confirmed a necrotizing enteritis and probable septicaemia with inflammation in the lung and heart. (5663.1)
- Greater Stick-nest Rat - captive, NSW - This animal was noticed to be losing weight and eating less February 16, 2007. Improvement was seen over the next few days and then the rat was found dead on the 21<sup>st</sup>. Necropsy revealed a white firm mass in the cranial lobe of the right lung. Cryptococcosis was confirmed in the lung histologically. (5647.1)
- Spinifex Hopping Mouse - captive, NSW - This animal was found dead in the exhibit. Necropsy revealed a dark green to black liver with several 1-2mm scattered white foci. Histopathologically these foci were areas of necrosis and bacterial proliferation. A similar lesion was also present in the lung and a heavy pure growth of *Salmonella bovismorbificans* was isolated from the liver. (5662.1)
- Diamond Python - captive, NSW - This snake presented after being found collapsed and tense in the outdoor exhibit. Fluids were administered but the snake was found dead the next morning. Necropsy revealed a diffusely pale liver. Intranuclear inclusion bodies were found in the CNS histologically. Electron microscopy will be performed. (5646.1)
- Swamp Wallaby - wild, NSW - This pouch young was found in the sand without a mother around. The wallaby had audible respiratory sounds, swollen left side of head, dehydration, a head tilt and died under anesthesia for X-rays. Necropsy revealed enlarged axillary and cervical lymph nodes with green pus in the left middle ear canal extending in the meninges. *Fusobacterium necrophorum* was isolated. (5629.1)
- Carpet python - captive, NSW - This was a reportedly captive bred snake that entered a commercial collection from a private owner. The snake was anorexic for 6 weeks and suddenly became limp and fell from handler during a photo shoot February 16, 2007. The snake was unable to right itself, developed a head tilt and died in route to TZ VQC. Necropsy revealed a massively enlarged and friable liver with multiple, 1-4mm white to grey foci. Histopathology revealed multicentric Lymphoma in almost all examined tissues with eosinophilic intranuclear inclusion bodies in the brain, pancreas, testes, and kidney suggestive of a viral pathogen, possible retrovirus. Electron microscopy will be performed. (5644.1)
- Ringtail possums - wild, rehabilitation, NSW - Two juvenile female ringtail possum siblings were presented for humane euthanasia and full post-mortem work-up for progressive ataxia and intension tremors. Unfortunately no abnormalities were detected either grossly or histologically. The neurologic problems in these possums may be functional rather than structural. (5621.1 and 5621.2)
- Australian Magpie - wild, NSW - This bird was found paralysed under a bush. The bird was in care for one day and died overnight. This bird had a similar presentation to a large number of Magpies and Currawongs that died about the same time last year. Vasculitis and myocarditis were consistent findings and although a viral aetiology has been suspected, no definitive cause for these deaths has been elucidated. Necropsy findings in this bird included haemorrhage over the epicardium with a few pale foci and a few pale foci scattered over an enlarged liver. Histopathologically this bird had mild to moderate multifocal lymphocytic myocarditis, myositis and hepatitis. A toxic or viral aetiology is suspected. (5624.1)

## March 2007

- Green and Gold Bell Frog - captive, NSW - The frog first presented with a cloacal prolapse which was treated with a purse-string. About two weeks later the frog developed ulcerated skin in the right axilla and impression smears were positive for acid-fast bacilli so the frog was euthanased. Necropsy revealed an 8x10mm erythematous ulcerated skin of the axilla, dark skin overall and a few small white foci over the liver. Histologic examination showed a nephroblastoma in the kidney and inflammatory lesions in the liver, lung and skin. Acid-fast bacilli were isolated from the liver and are pending speciation. (5667.1)
- Budgerigar - captive, NSW - This bird presented with diarrhoea, unable to fly and quiet. A large mass was palpated in the abdomen and the bird died after the physical exam. Necropsy showed a 2.5x2x2cm round purple soft mass in the coelomic cavity pushing the intestines, spleen and liver cranially around the heart. Histopathology revealed renal carcinoma with metastasis to the lung. (5672.1)
- Silkie Chicken - captive, NSW - This bird presented very weak with a head wobble and euthanasia was elected. Necropsy revealed a markedly enlarged liver and spleen with multiple white foci. The kidneys contain multiple large white cysts. Histopathology showed multicentric lymphoma in all examined tissues. Differential diagnoses are Marek's disease, Avian Leukosis or spontaneous lymphosarcoma. (5668.1)
- Greater Stick-nest Rat - captive, NSW - This rat was found dead on the exhibit floor and had been anorexic for the previous few days. Microscopic examination showed myocarditis, chronic renal disease, nodular hyperplasia of the liver and a carcinoid. (5669.1)
- Australian Pelican - wild, NSW - This bird was found weak and unable to stand. It was treated for one week and died. Lung lesions consistent with Aspergillosis were found during necropsy and were confirmed with histopathology. From the air sac there was also a heavy growth of *Escherichia coli* and *Candida tropicalis*. This bird also had multifocal myocardial degeneration, a localised necrotising and hemorrhagic myositis which may have been due to an injection and hemosiderosis of the liver. (5671.1)
- Six ducks as part of a mass mortality at Curl Curl Lagoon - There have been greater than 70 duck deaths and about 5 eels over a 1-2 week period. The birds present very weak, appear paralysed and some cannot hold their head up. Necropsy findings were unremarkable and histopathologic finding showed only mild acute intestinal epithelial degeneration and mild inflammatory changes in the liver. Initial botulism testing from liver and stomach contents of these 6 ducks was negative however 3 cases submitted by DPI were positive for botulism. (5685.1-5685.6)
- Little Penguin - captive, NSW - This penguin presented with severe dyspnoea and was kept in for treatment for almost 6 weeks due to tracheal lesions. *Trichomonas* spp was found on initial tracheal washes but acid-fast organisms were isolated a few days before euthanasia was elected due to poor response to treatment. At necropsy the trachea was filled with straw coloured frothy material and multifocal large friable yellow-tan plaques. The liver was diffusely pale and friable. Histologically there was granulomatous tracheitis, pneumonia, and air sacculitis consistent with *Mycobacteria* spp. (5681.1)

## April 2007

- Red-necked Wallaby - captive, NSW - euthanasia due to severe lumpy jaw and sinus infection. The animal had severe bacterial infection in the upper jaw, which probably originated from a dental or periodontal infection. The damage to the upper jaw was severe, and the bone had fractured as a result of the infection. An incidental finding was the presence of a single celled parasite infection (*Klossiella* sp.) in the kidneys. (5716.1)
- Red Kangaroo - captive, NSW - euthanasia due to lumpy jaw. Upon gross examination the animal also had a section of intestine that had folded in on itself (colonic intussusception). There were scant microscopic changes associated with this change, thus it seems likely that the intussusception occurred at or near the time of death. The kangaroo did have evidence of renal mineralisation (which is not uncommon in macropods) and inflammation in the trachea (possibly from chronic inhalation of material from the oral infection). (5728.1)

- Eastern Dwarf Tree Frogs - captive, NSW - 2 frogs found dead in one week, but they were from different enclosures. The first animal was found to have chronic inflammation associated with the presence of *Mycobacterium* sp. in the liver and kidney (5725.1). The second animal (5731.1) also had evidence of chronic inflammation of the kidneys, but no mycobacteria were seen.
- Red-tailed Black Cockatoo - captive, NSW - euthanasia, confirmation of proventricular dilation disease reported from a previous biopsy. This animal was hand raised and was resistant to weaning and was thriving poorly compared to other birds. The bird showed slow crop emptying after feeds and was unable to gain weight despite dietary manipulation. This syndrome is associated with dilation and inflammation within the nervous supply of the proventriculus. It is thought that the syndrome might be caused by a virus, but a virus has not yet been isolated or identified within infected animals. (5697.2)
- Ringtail possum - captive, NSW - died shortly after being found moribund in enclosure. History of anorexia over 2 days. The possum died with acute gastroenteritis and necrotising hepatitis. Bacteria had likely spread from the intestinal tract, via the blood stream, to the liver, resulting in hepatic necrosis. *Citrobacter farmeri*, *Pseudomonas aeruginosa*, and *Clostridium* species were isolated within the intestinal tract, but no organisms were isolated within the liver. (5709.1)
- Blainville's Beaked Whale - Bundeena, NSW - The whale was euthanased after stranding three times over a 2 day period and brought to TZ for post mortem investigation by NSW DEC. The animal was found to have multiple injuries associated with stranding including superficial skin abrasions, multiple rib fractures, acute muscle degeneration and hepatic and pulmonary congestion. The animal had pre-existing cookie cutter shark injuries and other lesions that may represent pox virus infection. The animal also had underlying inflammation throughout the lymph nodes. Since the animal was in good body condition, it is uncertain whether the skin and lymph node lesions would have contributed to the stranding event (5750.1).
- Carpet Python - captive, NSW - Euthanasia after sudden onset of unusual behaviour and neurological signs. Histopathology shows inclusion bodies and inflammation within the brain, suggestive of a viral infection. Granulomas were also evident within the liver, kidney and pancreas possibly due to previous parasite migration or bacteraemia. Tissues will be sent for electron microscopy to better characterise the nature of the inclusions (viral particles vs. host protein) (5721.1).
- Peaceful doves - captive, NSW - three doves died with evidence of inflammation in the liver. *Mycoplasma* sp. was isolated within the liver of one animal, but it is uncertain whether this is the primary pathogen (5726.1, 5757.1, 5758.1).
- Green turtles - wild, NSW - 3 turtles admitted the TZ Wildlife Hospital.
  - Case 5710.1, euthanasia due to a large intestinal obstruction with faeces, plastic bags, balloon rubber and fishing line. This animal also had acute bacterial and fungal infection of the lungs.
  - Case 5711.1, died on arrival, this animal showed some very unusual bone lesions on post mortem examination - metabolic bone disease. The animal also had intestinal trematodes.
  - Case 5747.1, euthanasia due to severe colonic impaction with faeces, plastic bags, balloon rubber, multiple pieces of wire and string. There were multiple perforated ulcers of the gut associated with the impactions, and bacteria had spread into the coelomic cavity, resulting in inflammation and infection of the tissues surrounding the heart.
- Tawny Frogmouth - wild, NSW - three birds were submitted to TZ wildlife hospital showing neurological signs including paresis (inability to stand, perch or fly) and unable to right themselves when placed on the back (abnormal behaviour). The birds each had evidence of inflammation consistent with parasite migration, presumably *Angiostrongylus cantonensis*. Cross sections of parasites were evident within the nervous tissue of two of the birds (5720.1 and 5727.1). One animal had evidence of small intestinal adenovirus like inclusion bodies (5722.1). One bird had evidence of parasite migration through the lung, as well as the nervous spinal cord and brain (5727.1). Tissue samples from these animals will be sent to David Spratt for investigation and identification. Tracking the seasonality of *A. cantonensis* infection is important, since this can be a zoonotic agent.
- Pacific Black Duck - wild, NSW - Euthanasia elected due to lameness. On post mortem examination, the bird was found to have a very large caudal abdominal carcinoma that was most likely compressing the nerves leading to the legs. The origin of the tumour was difficult to determine and appeared to involved both renal and reproductive tissues. (5717.1)

- Grey-headed Flying Fox - wild, NSW - kept in a rehabilitation facility for approximately 1.5 weeks, when it was then euthanased due to poor limb coordination and behavioural abnormalities. Histological examination of the brain and meninges revealed granulomas indicative of chronic infection with *Angiostrongylus cantonensis*, however, the chronicity of the lesion means that it may not be possible to identify parasites in the tissues. Hepatic lesions are also suggestive of parasite migration tracts. (5715.1).
- Grey-headed flying fox - rehabilitation, NSW - the animal had inflammation within the brainstem, which could be consistent with Lyssavirus infection or other viral infections of bats. It was recommended that tissues from this animal be submitted to Australian Animal Health Laboratories for viral diagnostic testing, and to re-iterate to the veterinarian that all rehabilitators and veterinary clinic staff who handle bats must be effectively vaccinated against Lyssavirus infection (5748.1).