



Zoological Parks Board
of New South Wales

Australian Registry of Wildlife Pathology

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.

SEPTEMBER 1999

- Blue mountain tree frogs (2) - captive, NSW - died with marked fluid build up in the coelomic cavity and subcutaneous tissues. Both frogs have chronic inflammation and cystic change in the kidneys. Endocardial cells and macrophages in the kidneys contain small, round, cytoplasmic organisms. Chlamydiosis is suspected and tissues have been forwarded to Prof. Peter Timms at the Queensland Institute of Technology for PCR and culture.
- Wild turkeys (2) - captive, NSW - euthanased due to severe pox infection and the onset of significant secondary infections.
- Carpet python - captive, NSW - a biopsy was submitted from a large mass in the region of the pancreas has confirmed the presence of a carcinoma, with several foci of bacterial infection.
- Eastern Brown Snake - captive, NSW - died with several small foci of haemorrhage in the body wall and massive pulmonary congestion and oedema. Envenomation by a con-specific cage-mate is suspected. It is unusual for a snake to die from venom of the same species. This snake was from a different region of the geographic range of the species and may be a different sub-species than its cage-mates. The snake also had a cholesteatoma, an inflammatory nodule containing cholesterol clefts, within the choroid plexus. The mass was most likely an incidental finding. Similar lesions occur in the brains of aged horses and the pathogenesis is uncertain.
- Eastern Grey Kangaroo - adult, male, NSW - formerly free ranging animal housed in a fauna park found to have cirrhosis of the liver attributable to liver fluke infection.
- Southern Boobook - wild, NSW - was found with severe ulcerations and fibrinous inflammation of the hard palate. Trichomonads were evident in large numbers within a wet preparation of a scraping of the oral lesion. Histopathology confirmed the deep nature of the lesion and revealed bony involvement.
Upon microscopic examination of the tissues, large numbers of coccidian oocysts were evident throughout the lamina propria of the small intestine. These parasites are most likely *Sarcocystis* sp., and are merely an incidental finding. Predatory birds and snakes usually act as the definitive host for this parasite, shedding oocysts into the faeces. Rodents or other animals function as intermediate hosts when they ingest the oocysts and develop protozoal cysts in their skeletal muscle.
- Tawny Frogmouth - wild, NSW - found to have an 8 cm long wooden stick penetrating the wall of the stomach, resulting in the formation of a fibrous tract in the coelomic cavity.
- Pied Currawong - wild, NSW - found hanging from a fence by the markedly proliferative skin of its feet. KOH preparation of the hyperkeratotic skin revealed a severe infestation with mites (*Cnemidocoptes* sp.)
- Ringtail possum - NSW - 6 possums being housed together during hand raising by a wildlife carer died over a 3 day period. Three possums were submitted in suitable condition for post mortem examination. These possums had haemorrhagic enteritis and multifocal ecchymotic haemorrhages throughout the lungs, liver and meninges. *Salmonella typhimurium* was isolated within several tissues of 2 of the possums. The third possum had been on antibiotics due to a pre-existing respiratory infection, and no organisms were isolated in its tissues. The

possums were being housed in an aviary, and birds are potential carriers of *Salmonella typhimurium*, however, the possums may have been exposed to the organism from the carer, the carer's pets, or through environmental exposure. The carer was contacted and the zoonotic potential of Salmonellosis was discussed.

- Ringtail possum - wild, NSW - adult female with 3 pouch young died with acute haemorrhagic enteritis caused by *E. coli*.
- Grey-headed flying fox - wild, NSW - two flying foxes were euthanased due to multiple puncture wounds to the muzzle and eyes. The wounds appear to be most consistent with intra-specific aggression; however, we have not seen these types of lesion before.
- Little Penguin - submitted by NSW National Parks & Wildlife Service - found to have linear necrosis and haemorrhage through the skull and brain, consistent with a gunshot to the head.
- Yellow-bellied sea snake (2) - wild, NSW - one snake was markedly decomposed, the other had evidence of stomatitis

OCTOBER 1999

- Spinifex hopping mice - eight mice within a closed colony in NSW died over a 14 day period with acute, extensive myocardial degeneration, pulmonary and hepatic congestion, encephalitis and acute to subacute, multifocal hepatocellular necrosis. Three of the spinifex hopping mice had intranuclear inclusion bodies within multifocal hepatocytes, and many had syncytial cells scattered throughout the hepatic sinusoids. A viral aetiology is suspected. The Murine Viral Monitoring Service in South Australia has offered to conduct PCR on samples of frozen tissue to assist with the diagnosis.
- Long-nosed potoroo - captive, NSW - euthanased due to a chronic toe infection, which began to spread up the tendon sheaths of the leg. Microscopic examination of the tissues revealed an underlying spindle cell tumour.
- Kerguelen Petrel - stranded on a beach in South Australia - died with acute urate nephrosis.
- Ringtail possum - in rehabilitation care in SA - died with a large liver tumour.
- Southern hairy nosed wombat - captive, SA - died with chronic renal failure
- Australian magpies - wild, NSW - four magpies submitted with *Syngamus trachea* nematodes partially obstructing their tracheas. Three of these birds had concurrent bacterial air sac infections. Several of the nematodes were forwarded to Ian Beveridge who confirmed the identity of the parasites.
- Australian Magpies and Pied Currawongs - wild, NSW - several young birds have been found to have systemic coccidiosis. Several of these birds have marked non-suppurative inflammation throughout the small intestine, multifocal non-suppurative myocarditis, and pulmonary congestion. One currawong had marked cerebral necrosis associated with the presence of the parasites in the capillary endothelium.
- Great cormorant - NSW - thin and dehydrated. Died with acute renal failure (gout).
- Green Python - captive, ACT - necrotising splenitis and enteritis. Small, intracytoplasmic inclusion bodies were evident within cells near these lesions suggestive of a viral infection.

NOVEMBER 1999

- Frilled lizard - captive, NSW - died several days after being found with a prolapsed colon. Post mortem examination revealed an impacted colon and necrosis of the colonic wall. Microscopic examination also revealed mild Wallerian degeneration of the central nervous system.
- Carpet python - captive, NSW - euthanased due to multiple large abscesses adjacent to the small intestine and throughout the parenchyma of the liver. Microscopic examination of the tissues revealed pre-existing malignant biliary tumours in several organs. Inclusion bodies suggestive of viral infection accompanied degenerative lesions in the central nervous system. Viral inclusion bodies were also seen within the neoplastic epithelial cells, within the kidney, pancreas and adrenal gland.
- Emu - captive, NSW - haemorrhaged into its coelomic cavity after shards of glass that had been eaten lacerated the intestine and then the aorta.
- Carpet Python - South Australia - captive snake found to have widespread viral inclusion bodies very similar to those seen in the carpet python noted above. Unfortunately, we are

unable to find an institution able to assist us with either viral culture or electron microscopy to further investigate these cases.

- Little penguin - found washed up on a NSW beach. Found to have severe lacerations of the dorsal thorax, consistent with a propeller induced injury.
- Wandering albatross -30+ years old, found beached by members of the Southern Ocean Seabird Study Association. The bird was unable to stand and had torn webbing of one foot, and bilateral bumblefoot. The albatross died after several days in care. Post mortem examination revealed severe subacute exertional myopathy of throughout the leg muscles. We are uncertain why a pelagic bird would suffer so severely from degeneration of the leg muscles.