



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.

AUGUST 2001

- Weddell Seals - Antarctica - 2 adult seals found dead during research projects. Gross post mortem examinations revealed pneumonia. Mycobacteriosis was suspected by the researchers. Histopathology revealed acute bacterial pneumonia with no evidence of lesions or organisms that would be consistent with mycobacteriosis (2417.1, 2417.2).
- Western Barred Bandicoot - part of a recovery program, WA. Found to have a tumour (probable mammary carcinoma) within the pouch fold. The bandicoot was also suffering from multiple proliferative masses along the muco-cutaneous junctions. The masses are morphologically consistent with papillomas. The Registry received simultaneous reports of similar lesions within bandicoots from WA, SA, and VIC as animals were transferred from an island and shipped to various members of the recovery program (without veterinary examination or quarantine). The epidemiology and morphology of the lesions is suggestive of a viral-induced lesion, however, further diagnostic tests are being conducted by Murdoch University to confirm this hypothesis (2430.1).
- Carpet Python - captive, NSW NPWS. Described in a previous report to have died with respiratory distress caused by marked proliferation of lymphoid tissue around and compressing the airways. Organisms consistent with Cilia Associated Respiratory Bacillus (CARB) were present lining the airways. Since this was the first report of this bacterium infecting an animal other than a rodent, tissues were sent to NSW Agriculture for electron microscopy to confirm the diagnosis. Electron microscopic examinations confirmed the presence of the bacterium, but also revealed large packets of C type retrovirus particles within the proliferative lymphoid tissue. The viral particles are very similar, morphologically, to those found in the NPWS confiscated snakes with Inclusion Body Disease. Unfortunately, retroviruses are very difficult to grow in culture, so it will be very difficult to compare the two viruses.
The snake may have been infected by the unusual bacterium due to immunosuppression stemming from the changes in the lymphoid system. Retroviral induced lymphoid neoplasms have been described in many species, but it would be difficult to prove a causal association between the presence of the virus and the tumour in a single case (2193.1). In the past six months we have diagnosed lymphoma in 6 native snakes from across Australia, while only 6 native snakes with lymphoma are logged in the Registry from the previous 16 years. More work needs to be done to define the potential role of retroviruses in our native snakes.
Centralian Carpet Pythons (2) - captive, NSW - both animals have a history of recurrent mucinous respiratory disease. Both animals were anaesthetised and lung washes were collected. Bacteria consistent with Cilia Associated Respiratory Bacillus (CARB) were identified within the samples. The examination of silver stained smears demonstrated the presence of these filamentous bacteria running parallel to cilia along respiratory epithelial cells. It is not possible to isolate CARB in culture as they do not grow in culture.
- Tammar Wallaby - captive, WA - euthanased due to ascites and suspected liver disease. Histopathology revealed cardiomyopathy and congestive heart failure (2431.1).
- Carpet Python - rehabilitation, NSW - euthanased due to severe skin infections. Post mortem examination revealed concurrent severe infection in the oviduct, and extensive

granulomas in the stomach wall caused by migrating roundworms (ascarids). The migrating parasites appear to have dragged bacteria from the gut lumen into the stomach wall. Skin infections in reptiles often reflect serious internal infections (2440.1).

SEPTEMBER 2001

- Leadbeaters possum - captive, NSW - subacute renal tubular necrosis suggestive of recent exposure to nephrotoxins. (2470.1)
- Eastern Quoll - SA - facial abscess overlying an area of chondrosarcoma/osteosarcoma. (2349.1)
- Yellow-tailed black cockatoo - SA - marked, diffuse, chronic cirrhosis of the liver. (2350.1)
- Cockatiel - SA - fibrosarcoma throughout the wall of the ventriculus. (2352.1)
- Carpet python - SA - gastric carcinoma with metastases to the liver (2354.1).
- Mulga Snake - NT - extensive dermal melanoma.

OCTOBER 2001

- Red-bellied black snake - captive, NSW - euthanased upon identifying the presence of an intussusception (folding of the intestine in upon itself). The lesion most likely occurred as a result of excessive motility stemming from chronic bacterial infection and inflammation in the colon. The inflammation and infection from the colon had also spread to the liver.
- Black headed python - captive, NSW - marked enteritis. The pyloric region of the alimentary tract had a very thickened wall and histopathology confirmed the presence of a tumour (gastric adenocarcinoma). (2508.1)
- Cockatiel - captive, NSW - adrenal adenoma and focal ovarian adenoma several years following surgical ovariectomy to treat excessive egg laying (2491.1).
- Common wombat - captive, NSW - acute infection in the kidneys (2492.1).
- Northern Quoll - captive, NT - marked testicular atrophy (2502.1)
- Nabarlek (2) - captive, NT - marked non-suppurative nephritis (2503.1, 2515.1).

NOVEMBER 2001

- Red Kangaroo - captive, NT - euthanased June 2000 due to loss of body condition and anorexia. The animal had a history of chronic skin lesions, which became worse during the wet season. The mob of red kangaroos are maintained in an enclosure that is seasonally infested with sandflies. Histological examination of the tissues revealed chronic, severe, non-suppurative interstitial nephritis, multiple proliferative skin lesions (consistent with poxvirus infection), and a large focus of granulomatous dermatitis. Small, single celled parasites were evident in clusters within macrophages throughout the dermis in this section. A systemic coccidian parasite has been reported in red kangaroos, however, the epidemiological, clinical and histological presentation could be suggestive of Leishmaniasis. Electron microscopy is underway at NSW Agriculture. Additional testing (PCR) will be conducted in Australia at the Walter and Eliza Hall Institute and Institute of Parasitology, University of Zurich to establish a definitive diagnosis. *Leishmania* is a single celled parasite that is transmitted by sand flies. Infection with the organism can be inapparent, or it can cause chronic skin nodules in people, domestic animals and wildlife. In very young and immunosuppressed individuals the infection can be systemic. Leishmaniasis is an important zoonotic disease in central and South America, Africa, India. Leishmaniasis is not known to occur in Australia, however, we have recently received an anecdotal report of PCR identification of *L. tarrentolae* within a flea removed from a rainbow lorikeet in Australia.
- Grey-headed flying foxes - two flying foxes submitted for post mortem examination due to concern by NPWS that the animals may have been poisoned. Many flying foxes were found dead on a property each morning for several days. Fruit on the property appeared to have been recently sprayed with some type of chemicals. Gross post mortem examinations revealed animals in good body condition, with no visible lesions, and stomachs full of recently ingested food. These findings are consistent with toxicosis. Tissues from these animals were forwarded to the EPA labs for toxicological examination. (2535.1, 2535.2)
- Little Penguins - two animals captive in separate facilities in NSW - died after being found in respiratory distress. Post mortem examination in each bird revealed granulomatous tracheitis, which focally obstructed a portion of the airway. *Mycobacterium* sp. was

isolated within the affected tissues. This is a very unusual presentation for avian mycobacteriosis. (2476.1)

- Brushtail bettong - captive, NSW - euthanased due to the presence of large, extensively mineralised masses in the liver and lung. Histopathology revealed extensive granulomatous inflammation in these organisms and *Nocardia* sp. was isolated within the hepatic lesions. (2548.1)
- Australian Raven - wild, NSW - granulomatous pneumonia and tracheal parasitism (*Syngamus trachea*). We usually only see this parasite in magpies and (less commonly in) currawongs (2432.1)
- Ringtail possums - wild, NSW - three young possums arrived at a wildlife rehabilitation clinic with fungal skin disease (*Candida* sp). The skin along the ventral abdomen, legs and tail was thickened, moist and corrugated. Candidiasis is a common infection in hand-reared possums. It is interesting to observe animals coming in from the wild with clinical disease associated with this organism.
- Boobook - wild, NSW - euthanasia after deterioration of the right shoulder joint while in rehabilitation. There was significant bacterial infection in the right shoulder joint and associated bones. *Staphylococcus aureus* was isolated within the joint. (2544.1)