

The Australian Registry of Wildlife Health



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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.

JANUARY 2006

- Captive passerines, NSW - malaria - Each summer, in this Sydney based collection we often see a single case of malaria within a java sparrow. Historically, there was an outbreak of malaria that resulted in mortality of the group of blue faced parrot finches. This year there have been fatal cases of malaria in a tri-coloured munia, a metallic starling, and a blue faced parrot finch (5002.1, 5034.1, 5048.1). Two of the birds were found dead, and one bird was found thin, weak, anaemic and in respiratory distress.

A blood film has been forwarded to Dr. Peter O'Donoghue for identification. With climate change, there have been predictions of the possible introduction of human malaria into more temperate zones, so it is important that we identify the species already locally present.

- Orange bellied parrots - Tasmanian DPIWE - There have been significant losses in young chicks in the breeding colony of orange bellied parrots in Tasmania. The local veterinarian, OBP recovery group, and Tasmanian DPIWE have requested the Registry's involvement in the investigation, primarily to rule out the potential presence of polyoma virus infection in the group. We have received samples from 5 chicks and tests are pending. We will conduct histopathology and use our existing permits to ship fixed specimens to molecular laboratories in the United States. Additional diagnostic investigations are being undertaken by Dr. Shane Raidal, DPIWE Tasmania, Gribbles Pathology, and the OBP recovery group, lead by Dr. Peter Holz.
- Carpet Python - captive, Canberra - a snake thought to have inclusion body disease was submitted for examination. The animal had a one month history of progressive neurological dysfunction that culminated in an animal that was largely immobile from a point approximately 30 cm caudal to the head. The snake seemed alert and able to right its head, but not the caudal body. There were only slight movements in the tail tip, and intermittent withdrawal reflexes of the tail. The snake was euthanased and a series of 4 masses, probably granulomas, were identified along the coelomic surfaces associated with the vertebral bodies. Bacterial cultures and histopathology pending, but inclusion body disease seems unlikely (5059.1). Many snakes thought to have clinical signs consistent with inclusion body disease or boids are found to have other illness when a thorough post mortem examination is conducted.

- Little Penguin - NSW DEC - wild, NSW - multiple lacerations consistent with boat propeller lesions. The bird was in excellent condition otherwise (5033.1).
- Green Turtle - NSW DEC - wild juvenile, NSW - The animal was euthanased due to severe emaciation and debility. The turtle had a fibrin lined cystic structure ventral to the left hip joint (fibrinonecrotising myositis, periostitis, and synovitis) associated with *Enterococcus* species bacteria. The turtle also had the parenchyma of the right kidney replaced by coalescing granulomas containing *Morganella morganii*. The turtle was moderately constipated, with firm faeces (not as firm as other turtles with severe colonic obstipation), and ulcerative colitis (5035.1). The lesions do not appear to be related.
- Little Penguin - captive, NSW - three little penguins died suddenly over a 4 day period. A fourth animal was submitted for post mortem examination due to neurological disease. Bacterial culture, avian influenza exclusion, and histopathology are pending.

DECEMBER 2005

- Green and golden bell frogs - 10 animals from the Roseberry population were euthanased due to a high prevalence of mycobacteriosis within this group of animals. Upon post mortem examination of the group, 8/10 had lesions consistent with mycobacteriosis, and *Mycobacterium* sp. are growing in 8/10 liver samples (4992.1-10). In previous diagnostic efforts, 6 species of *Mycobacterium* have been identified in lesions in this subpopulation of animals. We suspect a genetic predisposition to infection, but are also pursuing the possibility of an underlying viral infection in the animals. The infection has had a significant impact on recovery group related activities for this threatened frog species.
- Pelicans (6), Black Swan (1) - Centennial Park - The birds were found dead over a 2 day period in the same duck pond in the park. An additional 3 pelicans and a pied cormorant died within 2 weeks of the initial outbreak, at the same location, but these animals were too decomposed for examination. The birds examined had evidence of extensive subcutaneous haemorrhage, pericardial, epicardial and endocardial haemorrhage, and haemorrhagic/necrotising enteritis. An acute bacterial or enterotoxic event was suspected, but a variety of bacterial agents were identified within the gastrointestinal tracts of the birds. No bacteria were identified in the non-intestinal tissues of the birds that were best preserved (suggestive of enterotoxaemia). *Aeromonas sobrii*, *Clostridium bifermentans*, *E. coli* were identified in multiple tissues from several of the birds. *Clostridium sordellii* was identified in multiple tissues from only one bird. *E. coli* is the only organism found in all the birds that is capable of producing enterotoxins. Additional culture and serotyping is underway to determine if the *E. coli* isolated in the intestinal tracts was capable of producing enterotoxins. ELISA testing for C & D botulinum toxins was conducted on liver, serum, and intestinal content samples from each of the 7 birds and found to be negative. Avian influenza real-time PCR conducted on oral/tracheal, and cloacal swabs from the birds did not find any evidence of infection (5006.1 - 7).
- Grey-headed flying fox - with 41°C heat on Christmas Eve, and 44°C heat on New Years day, very large numbers of grey headed flying foxes were found dead. Most of the dead animals were neonates, but some aged animals were

also found dead. Most of the mortalities were reported on New Years Day, when temperatures were highest:

- Melbourne colony - size approx 12,000, peak colony temp 43°C on NY eve, deaths approx 300-400 (110 carcasses found in one limited area)
- Kurnell, NSW - colony size 3,260 adults, 400 dead young found on NY day
- Townsville, Billabong Sanctuary, QLD - colony size approximately 5,000 animals, peak colony temperature 42°C with low humidity, approximately 500 dead neonatal, juvenile and adult animals
- Wyoming, NSW, estimated 400 dead young animals
- Wingham (Taree - Wildlife Arc), NSW, estimated 5,000 dead animals after a hail storm
- Blackbutt Reserve, NSW (NATF - Audrey Koosman) - 2,500 animals dead (accurate number - census)
- Bellingen, NSW (Wildlife Arc) - approximately 5,000 animals dead
- Botanic Gardens, NSW - approximately 450 animals dead.

These events are very interesting and deserve further study, particularly more accurate census data, given the potential impact of global warming on the population status of this threatened species. We are preparing a questionnaire to send to wildlife rehabilitators to obtain additional information from this event and future events.

- Golden backed tree rat - captive, NSW - aged female, found to have a large abscess in the wall of the bladder with bacterial infection also in one kidney, and bilateral hydronephrosis. One of the keepers pointed out that the animal has a urethral prominence, a separate genital opening, and anus. Is anyone aware of any documentation relating to 3 separate urogenital/anal openings in native tree rats? (5022.1).

NOVEMBER 2005

- Sacred Ibis - NSW DEC - four birds found with paralysis over a few days in Marrickville. Two of the four birds had evidence of traumatic injuries (leg fractures and spinal fractures) sufficient to account for paralysis. The other two birds had been frozen and thawed and no cause of paralysis was identified. Samples from each animal were submitted to NSW DPI to rule out Newcastle disease and Avian influenza infection (4982.1 - 4984.4).
- Captive ducks and geese - NSW - Sudden death of a number of waterbirds that resided within adjacent enclosures. The birds had no evidence of any lesions on gross and microscopic examination, which is suggestive of exposure to a toxin or peracute viral infection. Tissues were sent to NSW DPI to rule out Newcastle's disease and Avian Influenza infection (4937, 4981, 4938.1).
- Northern Quoll - captive, NSW - Aged animal euthanased due to arthritic joints and old age. On post mortem the animal was found to have many parasites (probably Spargana) both free-living and encysted in the thoracic

and abdominal cavities and within thigh muscle and pleura. The animal also had an abscessed lymph node in the neck (4942.1).

- Cockatiel - captive, NSW - A raised lesion, approximately 7mm diameter, involving the ear was diagnosed as an adenocarcinoma. It presumably arose from glands of the external ear (4923.1).
- Cockatiel - captive, NSW - Extensive lesions of oviduct adenoma-adenocarcinoma were associated with thickening, adhesions, and a long clinical history of ascites (4924.1).
- Black-headed python - captive, NSW - coelomitis and multifocal nephritis. The snake also had eosinophilic cytoplasmic inclusion bodies in the brain, consistent with inclusion body disease (4968.1).
- Amethystine python - captive, VIC - captive animal that was euthanased with severe debility. The snake had cytoplasmic inclusion bodies in the brain and kidney - consistent with inclusion body disease of boids (4990.1).
- Three pythons - captive, QLD - three animals in the collection were found to have lymphosarcoma within a short period of time. One of the snakes had a concurrent gastric adenocarcinoma, and another had inflammation and a bacterial infection in its body wall and fat deposits (4987.1 - 4989.1).
- Hawksbill turtle - The wild turtle was found floating, weak and very thin at Mona Vale, NSW. A decision was made to euthanase the animal after its failure to respond to treatment. On gross post mortem the turtle was found to have multiple lesions including constipation with faecoliths (no foreign bodies present) (4943.1).
- Rainbow Lorikeet - wild, NSW - Large, yellow/tan, fleshy, dermal masses, thought to represent pox lesions, were found along the dorsal aspects of the head, neck and wings. The dermal masses were composed of large numbers of mites within multiloculated epithelial lined and keratinising cystic structures (4970.1). We have seen 2 other similar cases in rainbow lorikeets. Dr. Ian Beveridge has identified the mites as possibly from a totally new genus of *Knemidocoptes*-like organisms. We are attempting to collect 5 - 10 cases so that we can characterise and describe the new organism.
- Butcherbird - wild, NSW - the bird was found emaciated, debilitated and with a fractured beak tip. The animal was found to have a significant infection with throatworm (*Xenocordon gymnorhinus*), and a systemic infection with a leucocytozoon-like parasite, which had caused foci of necrosis and inflammation in the spleen (megaloschizonts) and myocardium (meronts). (4975.1).
- Black headed python - privately owned, NSW - the snake had an oesophageal obstruction with 3 rats and very striking cardiovascular lesions in the lungs and heart at the level of the obstruction (4962.1).

OCTOBER 2005

- From October onwards cloacal swabs, oral/tracheal swabs, and serum from heart blood samples are being collected from all dead waterbirds to be sent to NSW DPI for avian influenza surveillance.

- Green Turtle - NSW DEC - a juvenile female green turtle was euthanased after it was found severely emaciated with a marked colonic obstruction, and an old amputation of the right hind flipper. The entire large intestine of the animal was filled with very hard faeces and the colonic wall was becoming devitalised. We see this syndrome of faecolith formation in subadult green turtles, but do not understand the pathogenesis (4901.1).
- Plains rat - captive, NSW - was found dead with severe injuries from a cagemate attack. The animal was most likely attacked by cagemates due to weakness stemming from a severe lung infection with *Cryptococcus* species (4899.1).
- White headed pigeon - captive, NSW - euthanased after being found with a large multicystic mass surrounding the right elbow. A single acid fast bacillus was identified within fluid removed from the mass. Euthanasia was elected since similar peri-articular cystic masses in doves have been associated with mycobacteriosis. Mycobacteriosis was confirmed on post mortem examination (4913.1).
- Yellow tailed black cockatoo - captive, NSW - The bird has a long-standing history of abnormal posture and sitting on its hocks. The bird was euthanased after radiographs revealed the presence of very poor bone density in both legs, with numerous lytic lesions in the medullary cavities of the long bones. Microscopic examination of the long bones confirmed the presence of granulomatous inflammation and mycobacteriosis (4905.1).
- Budgerigar - captive, NSW - was found dead and gross post mortem examination revealed a severe, necrotising enteritis associated with the bacterium *Pasteurella pneumotropica*, which is an unusual finding for a budgie (4881.1).
- Bat - Shirley Turner of DPI Queensland reported a spherical pedunculated mass, with an ulcerated surface growing on the surface of the foot of a bat. Histologically the lesion had a "proliferative, pox-like" appearance with numerous intracytoplasmic inclusion bodies in keratinocytes. Further studies are being undertaken by Queensland DPI to confirm the presence of a viral agent and to identify the aetiological agent. Electron microscopy, isolation and sequence analysis are planned.