

ANIMAL HEALTH SURVEILLANCE

Information contributed by staff of the Livestock Health and Pest Authorities and NSW Department of Primary Industries

Exotic leishmaniasis detected

Two imported dogs have been found to be infected with leishmaniasis, a zoonotic disease caused by protozoan parasites of the genus *Leishmania*.

The first dog was under investigation for approximately 12 months. It initially had recurrent nail infections and wasting. It then developed lethargy, enlarged lymph nodes and skin lesions. The skin lesions included multiple crusting on both ears and the nose and multiple, variably sized areas of hair loss and mild crusting on the flanks and limbs.

The vet submitted samples of blood, fresh skin biopsy samples, and needle aspirates from affected lymph nodes to NSW DPI's State Veterinary Diagnostic Laboratory and to the Australian Animal Health Laboratory in Geelong. The dog was confirmed by extensive testing (serology, PCR and gene sequencing) to be infected with *Leishmania infantum*. The owner elected to euthanase the dog, and pathologists conducted a post-mortem examination.

In addition to the external skin lesions, the examination revealed a markedly enlarged dark-brown liver with smooth, rounded edges and an enlarged spleen with multiple, small, often coalescing pale nodules throughout its parenchyma. Under the microscope, inflammation of the skin, liver and spleen was associated with intracellular *Leishmania* organisms. Additional lesions were found in the heart and eye.

Blood from three other clinically normal dogs from the same household was submitted for screening. One other imported dog tested positive

for antibodies to *Leishmania*. The dog has begun a treatment program to minimise the risk of parasitaemia and the development of clinical signs.

About 20 species of *Leishmania* are known to cause disease in humans and other mammals. In humans, the clinical spectrum of leishmaniasis ranges from asymptomatic infections to those with high mortality rates. Three distinct forms are classically described: visceral, cutaneous, and mucocutaneous. With the increasing popularity of adventure travel, increasing numbers of cases are being diagnosed in Australians returning from overseas, particularly from South America, where there are wild animal reservoirs of the disease. Leishmaniasis is transmitted by sandflies.

Leishmaniasis was diagnosed as the cause of skin lesions in captive red kangaroos in the Northern Territory in 2004. Before this, Australia and the Antarctic were thought to be the only continents in the world free of *Leishmania* and its insect carriers. The host range, life cycle, and zoonotic potential of the Australian *Leishmania* are under study. Biting midges have been identified as possible disease vectors in the Northern Territory.



Skin lesions of *Leishmaniasis*. Photo: M. Gabor

**For further information contact
Therese Wright, NSW DPI Orange,
on (02) 6391 3351.**

In this issue!

Exotic leishmaniasis detected	1
Surveillance for a 'new' neurological disease in horses	2
Dermatophilosis in weaner cattle	2
Avian influenza H10 in poultry in NSW: an end to a long saga	3
Better surveillance for anthrax: the anthrax immunochromatographic test	3
Foot abscess and pregnancy toxemia	4
Enteric disease in pigs	4
NLIS detective work helps with disease diagnosis in cattle	5
Wet year leads to an unusual plant poisoning in cattle	5
Tick fever in northern NSW	5
Nardoo suspected of sporadic poliоencephalomalacia deaths in ewes	6
Dermatophilosis presenting as rain scald in Dorpers	6
Lungworm in goats	7
Calcium oxalate stones in wethers	7
Pulmonary squamous cell carcinoma in a cow	7
Tammar wallaby sudden death syndrome investigations	7

Surveillance for a 'new' neurological disease in horses

Since late February there have been many reports in NSW of horses displaying neurological signs, with a mortality rate of about 10%. Cases have also been reported in South Australia and Victoria. In NSW, cases west of the Great Divide have extended from Mungindi in the north to the Murray River, with a large number of cases in the Murray and Riverina districts. There have been many cases in the Hawkesbury Valley west of Sydney and in the Lower Hunter Valley.

The usual signs in affected horses have been depression followed by lack of coordination, high stepping in front, weakness and ataxia, especially in the hindquarters. Severely affected horses fall over and have difficulty getting back up. Less severely affected horses drag their toes and appear stiff. Muscle fasciculation and hyperaesthesia have also been reported.

A few horses have had head tremor and facial paralysis, especially of the lips, sometimes reported as difficulty in eating. In a number of cases there have been initial signs resembling those of mild colic. Both normal and increased temperatures have been reported. In some cases sweating has been reported by owners before the onset of ataxia.

Preliminary results in most cases have been consistent with recent infection with Kunjin virus, an Australian mosquito-borne flavivirus. However, infection with another, related virus cannot be ruled out until testing of

convalescent serum is completed. A small number of horses have been positive for the related flavivirus, Murray Valley encephalitis (MVE). Initial test results must be interpreted with caution, since it is not unusual for horses to test positive for these viruses without showing any illness. In the past, infection with the MVE and Kunjin viruses has usually been asymptomatic and followed by seroconversion. Many horses have been tested for Hendra virus and all have returned negative results.

The very wet season across much of Australia has been ideal for the amplification of flavivirus numbers in the normal mosquito – waterbird – mosquito cycle.

**For further information contact
Therese Wright, NSW DPI Orange,
on (02) 6391 3351 or Belinda Walker,
NSW DPI Gunnedah, on (02) 6741 8363.**

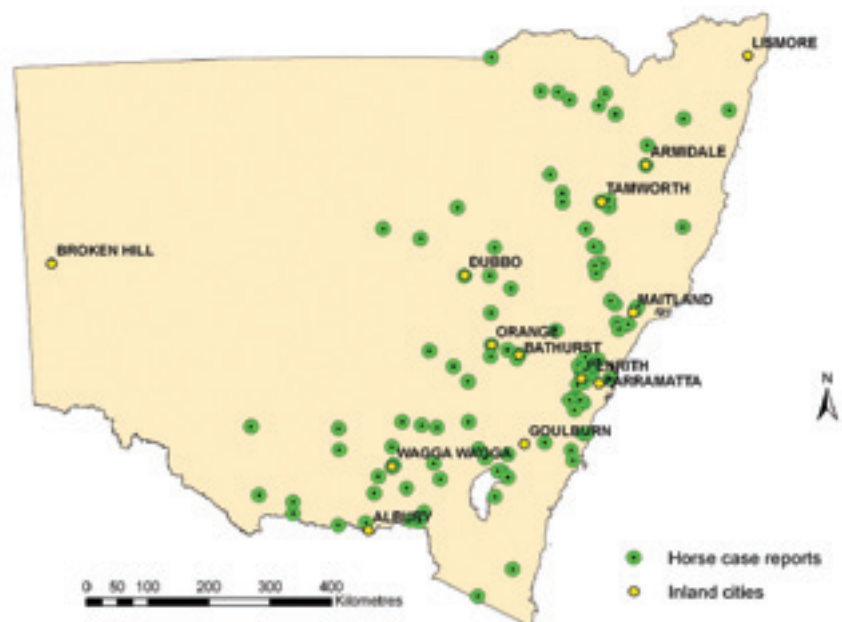
Dermatophilosis in weaner cattle

Skin lesions were noticed at weaning on four of a group of 63 Shorthorn calves near Burren Junction NSW in March 2011. This followed a particularly wet summer; there was abundant mixed natural pasture growth in the region.

The 6- to 8-month-old calves were well grown and generally in good health. On two of the affected calves, lesions were restricted to the ventral abdomen and legs. On the other two, lesions were more generalised and severe.

The lesions on the ventral abdomen were broad and flat, with hyperkeratosis between

Locations of horses showing central nervous system signs, 1 February to 13 April 2011



5 mm and 1 cm thick. The lesions on the body and legs were pyramid shaped, with a base up to 2 cm in diameter and hyperkeratosis extending away from the skin surface in a horn-like manner. If the lesions were plucked from the animal, the hair came out with the horn-like growth and a dry granulation bed was exposed beneath. There was no pruritis.

The two weaners with generalised lesions were smaller and in poorer condition than their cohorts. A skin scraping was taken and submitted with samples of the skin lesions to the State Veterinary Diagnostic Laboratory. The most severely affected heifer was also sampled to determine whether she was immunocompromised from persistent infection with bovine pestivirus.

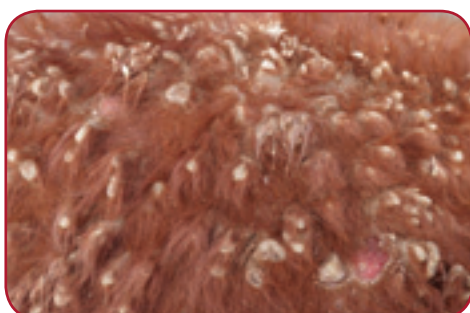
At the Laboratory, a profuse growth of *Dermatophilus congolensis* was cultured from the skin lesions. The skin scraping smear was negative on Gram stain for *D. congolensis*. The heifer tested negative for pestivirus antigen. After treatment with oxytetracycline, the animals recovered.

Dermatophilosis in cattle is rare in the North West Livestock Health and Pest Authority. Although the bacterium can persist in healthy carriers, it is not highly invasive and rarely breaches the natural barriers of healthy skin. Intercurrent disease or stress predisposes animals to clinical infection.



Generalised skin lesions on weaner heifer.

Photo: L. Read



Pyramid-shaped hyperkeratotic lesions extending from the skin surface. Note the dry granulation bed beneath a lesion that has been 'plucked'. Photo: L. Read

For further information, contact Libby Read, District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6792 2533.

Avian influenza H10 in poultry in NSW: an end to a long saga

In *Animal Health Surveillance 2010/1*, low-pathogenic avian influenza (LPAI) was reported in a NSW poultry breeder flock in which the H10/N7 subtype was associated with mild disease in hens. This case has been subsequently reviewed.

Reports of outbreaks of the LPAI (H10) subtype in poultry are rare but have come from turkeys and emus in the USA, farmed Pekin ducks in South Africa, and chickens in Ontario, Canada. Also, H10N7 has been isolated in Italy from poultry products smuggled from China.

Transmission of LPAI viruses from birds to humans, who then develop clinical signs, has been reported only for subtype H9N2 in Asia, H11N9 in North America, H7N2 in North America and the UK, H7N3 in the UK, and H10N7 in Egypt, where transmission was possibly from a live bird market.

The source of the NSW incursion remains unclear. Entry could have occurred via wild waterfowl, but considering the extremely good biosecurity at the site this was very unlikely.

A nearby duck farm was also an unlikely source. In 2006, evidence of prior exposure to LPAI (H6) was detected in ducks there. However, in 2010, H10 exposure was not detected on the same farm, although there was serological evidence of previous exposure to the LPAI (H1) subtype.

Two weeks after the start of the 2010 outbreak, three flocks of 'spent hens' that had undergone veterinary inspection with no clinical signs or evidence of egg production drop were sent for slaughter to allow their scheduled replacement with young birds.

Unexpectedly, 1 day after the slaughter, a worker at the processing plant came down with conjunctivitis. Over the next week, five other workers presented to the offsite company OH&S physician with conjunctivitis. These workers had used WorkCover-approved protective masks and goggles during the bird processing.

All flocks that were scheduled to be processed were subsequently tested by RT-PCR for the presence of avian influenza virus.

None was positive. No further human cases of conjunctivitis were reported.

No virus was detected in any swabs collected from flocks on the site after March 2010; however, there was serological evidence of exposure to the virus in all flocks that were on site during the peak of the outbreak in March. Flocks that were placed on the site after the peak of the outbreak showed no evidence of seroconversion to H10N7.

Despite the large number of flocks on the site and the introduction of new flocks, the infection with H10N7 did not cycle on the site for a period longer than 8 to 10 weeks.

For further information contact George Arzey, NSW DPI, at Elizabeth Macarthur Agricultural Institute, on (02) 4640 6402.

Better surveillance for anthrax: the anthrax immunochromatographic test

The anthrax immunochromatographic test (ICT) is a new test in NSW for the field diagnosis of anthrax. Because it detects protective antigen, a protein found only in *Bacillus anthracis* (the cause of anthrax), the test is highly accurate (high sensitivity and specificity).

Kits are now available for use by veterinarians investigating cases of sudden death; for advice on using the kit, talk to your Regional Veterinary Officer.

Field vets will now be able to make a presumptive diagnosis of anthrax while on a property. If a test is negative, vets will be able to conduct an autopsy confident in the knowledge that they are not contaminating the property with *B. anthracis* spores and not putting themselves or others at risk of contracting anthrax. Further information about the kit can be obtained from the SCAHLS (Sub-committee on Animal Health Laboratory Standards) web site (http://www.scahls.org.au/__data/assets/pdf_file/0003/1280829/Anthrax_ANZSDP_2010_FINAL.pdf)

Kits will be supplied free to field veterinarians in NSW who perform anthrax exclusions during the course of their work. Use of the kits is subject to conditions. In general, these are:

- The test should be used only by trained personnel in investigating sudden or unexpected death to make a presumptive

diagnosis of anthrax, but not to exclude anthrax.

- Positive test results should be confirmed by an approved method of laboratory diagnosis.
- If the result is negative, appropriate samples should be submitted to a diagnostic laboratory for investigation of the sudden or unexpected death in an attempt to make a definitive alternative diagnosis.
- If the kits are used with a negative result, an anthrax ICT negative report must be completed and submitted to the anthrax coordinator for surveillance purposes.

For further information contact Graham Bailey, NSW DPI Technical Specialist, Cattle Health Coordinator, on (02) 6391 3899.

Foot abscess and pregnancy toxaemia

Pregnancy toxaemia secondary to foot abscess was diagnosed as the cause of death in ewes at Tullibigeal.

The property was initially visited when the owner became concerned about the possibility of footrot after 15% of recently purchased ewes developed lameness. Inspection of the ewes showed signs consistent with foot abscess, with no interdigital lesions or underrunning of the hoof.

The property was revisited a week later after the death of six ewes, with others looking depressed and going down. The owner had noted that before they died the dead ewes had been severely lame, as were the other affected ewes. Although the mob was on good pasture, the owner had observed that the affected ewes spent most of the time near water or under trees, rather than grazing.

Post-mortem findings in one of the affected ewes included increased ketones on urinalysis and an enlarged, pale liver; the ewe was carrying triplets. Urinalysis on two other



*Foot abscesses and advanced pregnancy contributed to pregnancy toxaemia.
Photo: K. Marsh*

affected ewes also showed increased ketones. Histopathology of the liver later showed hepatic lipidosis consistent with physiologic fatty liver, as seen in pregnancy toxaemia.

At the time of the last visit, most of the ewes affected with foot abscess had improved. The mob started lambing soon after. This, combined with grain feeding, meant that no further cases of pregnancy toxaemia occurred.

For further information contact Katharine Marsh, District Veterinarian, Lachlan Livestock Health and Pest Authority, on (02) 6895 2512.

Enteric disease in pigs

In early February 2011, a property at Bangalow, near Byron Bay, reported deaths, ill thrift and scour in a group of 13-week-old pigs. Disease was limited to a group of pigs that had been introduced a month earlier from a producer in the Grafton region. The pigs were housed in concrete pens and were being fed a commercial ration to which the growth promoter olaquinox had been added at 25 g/t. Fourteen pigs had died after a 2-week period of ill thrift and mild scouring. Examination of 20 surviving pigs from this pen revealed evidence of scour and poor body condition in most of the pigs. A hundred pigs in other pens appeared healthy, except for the occasional cough.

Two pigs were euthanased and necropsied. Gas was observed in the distal intestines, with liquid contents. Multiple 5-mm-long white *Trichuris suis* whipworms were observed in the spiral colon. One of the pigs had red-purple discolouration of the cranioventral lung fields, with some fibrin on the pleural surface.

Histopathology of the lung from one pig revealed areas of congestion with a fibrinosuppurative and necrotising pleuropneumonia. *Bordetella bronchiseptica* was isolated from this lung. Erosive colitis was also diagnosed histopathologically. The pathologist noted that there was a considerable worm burden, with extensive damage to the mucosal epithelium. *Salmonella typhimurium* was isolated from the gastrointestinal tracts of the pigs. The ileum in one pig was positive to a PCR test for *Lawsonia intracellularis*. *Trichuris* spp. eggs were observed in the faeces.

The pigs were diagnosed with bacterial enteritis secondary to whipworm infestation.

Although the pigs were being reared on concrete, they had originated from a farm where they were reared on dirt. The whipworm infection would have been acquired from this farm and developed further once the pigs were moved to their new farm. The whipworm damaged the gastrointestinal tract, making it more prone to secondary infections with the *Salmonella* and *Lawsonia*. The pneumonia was also a secondary problem. These bacteria were likely endemic in the piggery but had not previously caused problems because the pigs had not been weakened by parasitism. In-feed olaquinox protects against *Lawsonia*, but it would not have been as effective in the pen of introduced pigs once their appetites declined. The affected pig producer was given advice on medicating the remaining sick pigs and on general biosecurity principles to avoid introducing disease.



Ill thrift and scours associated with whipworm infestation. Photo: M. Ball

For further information contact Matthew Ball, Senior District Veterinarian, North Coast Livestock Health and Pest Authority, on (02) 6621 2317.

NLIS detective work helps with disease diagnosis in cattle

Eleven out of a mob of 35 cows with calves at foot in the Gundagai area were examined because of ill thrift. They had been purchased through the Dubbo saleyards and had been treated with ivermectin and clorsulon for internal parasites soon after arriving on the property. One cow had appeared weak before the vet's visit, and the animals examined had poor hair colour, loose faeces and poor body condition.

As the animals had only recently arrived on the property, the NLIS (National Livestock Identification System) database was searched to see where they had originated. The cattle had come from various parts of the State, but all the sick cattle had been bred in the Maitland

and Gloucester areas. After consultation with the district veterinarian there, the main causes of ill thrift in cattle in that area – liver fluke, worms, and selenium and copper deficiencies – were tested for. All the cattle had negligible numbers of worm eggs, negative liver fluke ELISAs and normal copper levels, but they had low selenium levels, as determined from GSH peroxidase results (14 to 32 U/g Hb, normal 40 to 300). The animals were treated with an injectable source of selenium and have since recovered. This investigation highlighted the benefit of having a traceability system, in that targeted testing could be used once the origin of the animals was established.

For further information contact Tony Morton, District Veterinarian Wagga Wagga, on (02) 6923 0903, or Ian Masters, District Veterinarian Gundagai, on (02) 6944 1588.

Wet year leads to an unusual plant poisoning in cattle

Surveillance in the Riverina has detected a very unusual plant poisoning of cattle.

When three cattle died and a further 12 were sick near Wagga Wagga in January, the problem was initially thought to be grain poisoning in a stubble paddock where, because of the wet season, large amounts of grain had not been harvested. Sixteen animals eventually died out of mob of 48. When the district veterinarian was called, a post-mortem examination found that a recently deceased cow had dehydration, extensive sub-epicardial petechial haemorrhages and pulmonary congestion. The omentum was congested but the rumen appeared normal and contained negligible amounts of grain. The abomasum was very congested but not oedematous. The small intestine and caecal mucosa had small haemorrhages and congestion of the blood vessels. There was a moderately enlarged gallbladder, but the liver was grossly normal. The kidney cortex was a creamy colour, and the carcass gave off an unusual uraemic odour.

Histopathology revealed multifocal renal tubular necrosis with severe leucocytic infiltration, together with moderate hepatic congestion with scattered foci of hepatocyte loss and generation and monocytes. Biochemistry showed very high blood urea levels (azotaemia) and electrolyte imbalances.

A walk through the paddock revealed a large amount of lesser loosestrife (*Lythrum*

hyssopifolia), and this was decided to be the cause of the problem. This plant has caused substantial sheep mortalities in sheep in the past, but reports of cattle poisonings are rare. It has not been as evident in the last decade of dry years; however, the abnormally wet late spring and early summer of 2010 were ideal for its resurgence.



Lesser loosestrife. Photo: NSW DPI image library

For more information contact Tony Morton, District Veterinarian Wagga Wagga, on (02) 6923 0903.

Tick fever in northern NSW

Cattle from a small mixed-breed beef herd east of Casino in northern NSW were sick with signs that the owner thought were due to 3-day sickness. After the death of two cows, veterinary help was sought and post-mortems were done.

The carcasses were jaundiced, with widespread petechial haemorrhages. The lymph nodes and spleen were enlarged and the kidneys were 'gun-metal' coloured. The bladders contained dark red urine, which was strongly positive for haemoglobin on dipstick analysis. The veterinarians also noted that the dead and sick animals, and their herd-mates, were infested with large numbers of cattle ticks.

Although initial blood examinations revealed the presence of *Theileria* organisms, the clinical picture was clearly tick fever. Treatment with Imizol® was started immediately, and by day 3 there had been no further deaths and no new clinical cases. By day 8 all sick animals had shown some improvement. Tick fever due to *Babesia bovis* was subsequently confirmed by the specialist laboratory in Queensland.

A total of four cows died in this outbreak of tick fever; four others and one calf became ill and are recovering.

Cattle tick infestation is a regulated disease in NSW. Investigations into the source of infection in this herd identified the bull as the likely cause. The bull had evidence of long-standing cattle tick infection and had

not shown any signs of illness. It had been imported from Queensland as a calf, where it had likely been exposed to *B. bovis* and become a carrier.



Enlarged spleen and jaundice in tick fever.
Photo: P. Freeman

For further information contact Sam Allan, NSW DPI Tamworth, on (02) 6626 1214.

Nardoo suspected of sporadic polioencephalomalacia deaths in ewes

An investigation into six deaths over 3 weeks in a mob of 300 three-year-old Merino ewes found the cause to be polioencephalomalacia (PEM), most likely due to consumption of nardoo (*Marsilea drummondii*).

The mob involved was part of a large, self-replacing flock in the Carinda district that had been grazing pastures in which Nardoo was growing.

Affected ewes were found dead or standing alone depressed. The latter subsequently died.

At the time of the investigation the property was still partly isolated by flooding and could not be easily accessed. Two affected ewes were transported to an accessible location. One ewe, which had been affected for 3 days, was in lateral recumbency, with severe opisthotonos and some paddling. No menace reflex was present. The second ewe was still standing but with reduced menace reflex. Necropsies failed to find any gross pathology.

Samples were submitted from both ewes under the National Transmissible Spongiform Encephalopathy (TSE) Surveillance Program. Both ewes were negative for TSE. Histological examination of the brain of the most affected ewe found polioencephalomalacia, whereas there were no significant findings in the second ewe.

For further information contact Shaun Slattery, District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6792 2533.

Dermatophilosis presenting as rain scald in Dorpers

A small Narrabri Dorper flock presented with 10% of both ewes and lambs affected with skin lesions resembling rain scald of horses. Laboratory testing confirmed dermatophilosis as the cause.

Two weeks before the property visit, the owner had noticed that the mob of 200 White Dorper ewes and their lambs (6 to 12 weeks old) had unusual skin lesions. In the following 2 weeks the lesions progressed, but no more sheep were affected.

The flock had been regularly yarded in the previous 2 months under regularly wet conditions. The pasture consisted of improved tropical perennials 50 cm high, dominated by Queensland Blue Grass. As a result, to access their feed the sheep regularly pushed through wet grass above their backs.

About 20 ewes were affected, including five severely, and 20 lambs were affected, including three severely. The mob in general and all sheep examined were alert, in good condition and strong.

On first examination, the lesions were similar to those in horses affected with rain scald. There was little crusting. In both ewes and lambs the lesions consisted of hair loss with reddening of the underlying skin and some scab formation.

The locations of the lesions differed between the ewes and lambs. The lesions in the ewes were on the dorsal surface, extending down the flanks in severe cases and with complete hair removal in some areas. The one dorsal area constantly not affected was that covered by the non-shedded 'rug', with its longer wool.

On the lambs the lesions were most severe on the caudal surface of the ears; in some lambs this area had complete hair loss. On the back of the neck the lesions were less severe, with partial hair loss.

Unlike with dermal necrosis, the lesions did not affect the full thickness of the skin. No sheep had signs consistent with photosensitisation (i.e. the muzzle and other areas of exposed skin was normal), and no lambs or ewes had scabby mouth.

One single Dorper – a throwback to its crossbred origins – had a near-complete wool fleece. This sheep had severe dermatophilosis, as exhibited by lumpy wool and crusting of the coronets.

Scabs from one of the ewes were positive for *Dermatophilus congolensis* on both Gram stain and culture.



The crusting normally seen with dermatophilosis was absent in these sheep. Photo: S. Slattery

For further information contact Shaun Slattery, Senior District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6792 2317.

Lungworm in goats

Goats were examined on a property bordering the Kaputar Ranges in the Moree district. There were 30 goats on the property; two appeared ill, and one of these was in recumbency. Two goats had died suddenly the previous week. No routine drenching or vaccinations were carried out.

At post mortem examination of the recumbent doe, the right cranial lung lobe was thickened and nodular. The caudal lobes appeared normal. The dependent left lobes appeared consolidated, but interpretation was difficult because of the prolonged recumbency. The kidneys had small pinpoint foci in the parenchyma.

Histopathology of the lungs revealed a heavy nematode infestation with secondary pneumonia. The presumptive nematode involved was *Muellerius capillaris* (nodular lungworm). Its ability to cause mortality in otherwise healthy stock is questioned in the local literature, but it is considered a serious problem in some overseas goat farms.

Because definitive research on *M. capillaris* in Australia is lacking, its significance to the Australian goat industry is largely unknown. Given the record wet summer we have just experienced, the conditions for contracting and maintaining an infection with this parasite are optimal.

For further information contact Derek Lunau, District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6752 8012.

Calcium oxalate stones in wethers

An unspecified number of wethers on a property near Barraba died. The flock

comprised wethers only, and worm tests had confirmed that worm counts were not high.

One wether was necropsied and a diagnosis of urolithiasis was made. The wethers were grazing unimproved grass country on serpentine hills, and there was adequate green feed and herbage available.

The offending uroliths were identified by the laboratory as calcium oxalate. Interestingly, deaths coincided with the removal of lick blocks containing significant amounts of calcium, as well as significant amounts of sulfur and, of course, salt. No connection could be found between the sulfur and the calcium oxalate stones, but there is a correlation between inadequate calcium to phosphorus ratios and the formation of calcium-based uroliths. There is also evidence to suggest that adding salt to the diet stimulates drinking, which in turn reduces the concentration of minerals in the urine and prevents stone formation.

Calcium oxalate stones are not overly common in sheep, but it was concluded that either an imbalance of calcium and phosphorus existed or that discontinuation of the salt supplement had triggered the stone formation. However, some of the deaths may well have had other causes.



Uroliths blocking the urethra. Photo: T. Irwin

For further information contact Ted Irwin, District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6729 1528.

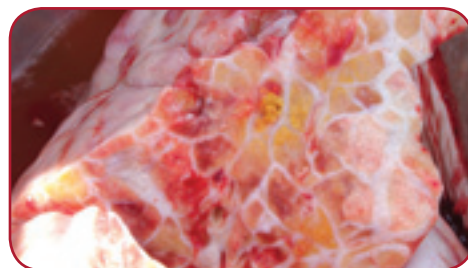
Pulmonary squamous cell carcinoma in a cow

An 8-year-old Hereford cow was examined for rapid weight loss, weakness, and ataxia when driven. From a distance it had its neck extended and looked dyspnoeic. It was euthanased for the TSE exclusion program and an autopsy was performed.

There was extensive interstitial inflammation in the lung tissue and obliteration of the alveolar tissue in all lung sections. The surface of the lung was homogeneously lumpy,

rather than having discrete lumps. The liver was enlarged by 50%, and the cut surface had a distinct pattern suggestive of congestion.

The kidneys had discrete areas of paleness presumed to be necrotic areas due to infarction. The results were negative for TSE and tuberculosis, and histopathology confirmed the changes to be caused by a squamous cell carcinoma.



Squamous cell carcinoma. Photo: T. Irwin

For further information contact Ted Irwin, District Veterinarian, North West Livestock Health and Pest Authority, on (02) 6729 1528.

Tammar wallaby sudden death syndrome investigations

Starting in November 2010, mortalities in Tammar wallabies from sudden death syndrome have been reported from a nature reserve and from several breeding and research facilities in separate locations in eastern Australia. Mortality rates in some sites have been as high as 75%. The animals die suddenly or are found moribund and (rarely) paddling. Gross pathology has included widespread pulmonary congestion and haemorrhages throughout the body.

On the basis of history, environmental conditions, clinical signs and post-mortem findings consistent with previous incidents, Tammar wallaby sudden death syndrome is suspected to be the cause of these recent mortalities. Samples have been submitted to EMAI for viral culture to confirm the diagnosis, and the epidemiological investigation is ongoing. It is possible that these incidents have been the result of human intervention through the movement of a susceptible macropod species into a geographical area that is well north of its usual habitat and in the potential range of a pathogenic orbivirus.

For further information contact Greg Curran, NSW DPI Broken Hill, on (08) 8088 9336.

Getting information on animal diseases

This surveillance report can convey only a very limited amount of information about the occurrence and distribution of livestock diseases in New South Wales. If you would like more specific information about diseases occurring in your part of the State, contact your local Livestock Health and Pest Authorities District Veterinarian or Departmental Regional Veterinary Officer.

For Statewide information, contact NSW DPI Animal and Plant Biosecurity Branch in Orange on (02) 6391 3237 or fax (02) 6361 9976.

For more information on national disease status, check the National Animal Health Information System (NAHIS) via the internet at:
<http://www.animalhealthaustralia.com.au/status/nahis.cfm>

This is a report under the Animal Disease Surveillance Operational Plan, Project 8, 'Reporting for Animal Disease Status in NSW'.

Prepared by Rory Arthur, Animal and Plant Biosecurity Branch,
NSW Department of Primary Industries, Kite St, Orange 2800.
Phone 02 6391 3806

E-mail: rory.arthur@industry.nsw.gov.au

Copies of NSW Animal Health Surveillance reports are available on the internet at:
<http://www.dpi.nsw.gov.au/newsletters/animal-health-surveillance>

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (April 2011). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up-to-date and to check the currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.

The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product name does not imply endorsement by NSW Department of Primary Industries over any equivalent product from another manufacturer.



Primary
Industries



LIVESTOCK HEALTH AND PEST AUTHORITIES

LHPA

Safeguarding Agriculture in NSW