



VLA MONTHLY SURVEILLANCE REPORT OCTOBER 2008

Highlights

- **Specialist dairy veterinarians in the South West are anticipating a winter dominated by nutritionally associated diseases due to the poor growth and harvesting conditions for all forage crops throughout the year.** – *Energy deficiency diseases such as acetonemia and disease associated with mycotic or bacterial spoilage of forage such as abortion are prime candidates*
- **Cases of acute fasciolosis in sheep provide an early warning for sheep farmers and vets** – *The anticipated high risk of fasciolosis caused by the wet weather conditions is starting to become reality. Sheep farmers need to implement their flock health strategies to avoid possible serious losses.*
- **Evidence of increased incidence of fasciolosis in cattle indicates a need for implementation of control measures in endemic areas** – *This should be built in to herd health plans in endemic areas and monitoring should be taking place in herds in areas where the disease has not previously occurred because of the evidence indicating increased geographical spread of infection in GB*
- **Further evidence of an increase in parasitic gastroenteritis in cattle** – *The principal cause of this greater risk of PGE in cattle is likely to be the favourable weather conditions for the nematode parasites; however there may be other factors such as reduced chemoprophylaxis being carried out at farm level*
- **Suspected macrocyclic lactone resistance in common sheep nematodes** – *This has important implication for the sheep industry in particular. Reduced therapeutic efficiency of this important group of anthelmintics would make treatment of clinical disease difficult and would reduce the efficacy of control regimes using chemoprophylaxis*
- **A further case of infectious bronchitis caused by the imported QX strain diagnosed in a small flock of chickens.** – *Further evidence that this virus is still circulating in the poultry population. The possibility that the virus is circulating in small “backyard” flocks needs to be considered.*
- **Mycoplasma gallinarum, Erysipelas and Blackhead causing losses in turkeys destined for the Xmas market** – *Any serious escalation of these losses could affect the cost of turkeys at Xmas*
- **Miliary TB diagnosed in an Alpaca.** – *Further evidence of the susceptibility of this species to TB*

VLA FARM INVESTIGATIONAL VISITS OCTOBER 2008

Reason for Farm Visit	Number of farm visits
Animal health & welfare	5
Human & animal health & welfare	4
Human health only	2
Other projects	3

CATTLE

Reproductive diseases

Reproductive failure

Luddington investigated a reproductive failure problem in a dairy herd. A high prevalence of lameness (25%), subclinical ketosis and poor heat detection were found to be contributory factors.

Mycotic abortion

Shrewsbury diagnosed mycotic abortion caused by *Aspergillus fumigatus* infection on examination of placenta from one of 2 cows which aborted from an adult herd of 90 Friesians. A total of 6 cows had aborted in the last 6 weeks.

Langford also diagnosed a case involving a single abortion in a 90 cow dairy herd at an approximate gestational age of 6½ months. A fetal post mortem undertaken by the attending veterinarian revealed typical lesions and *Aspergillus fumigatus* was subsequently identified following laboratory examination of the fetal stomach contents.

Bacillus licheniformis

Following four abortions within the last four months in a 175 Friesian Holstein cow dairy herd, a fetus and placenta were submitted for post-mortem. The placenta exhibited a severe necrotic placentitis with nothing of note other than severe autolysis seen in the fetus. A pure growth of *Bacillus licheniformis* isolated from the fetal stomach contents together with the placental pathology indicated it to have been the likely cause of abortion.

Alimentary tract diseases

Parasitic gastroenteritis (PGE)

There were numerous diagnoses of PGE in cattle continuing the trend observed in September.

Luddington described a case in which eight Simmental cross Friesian finishing cattle in a group of 30 were showing signs of diarrhoea and one had died. On another farm five eight-month-old calves in a group of 17 were in poor condition and two became recumbent. One calf was submitted for necropsy which weighed only 104 kgs. Findings were consistent with a very heavy Trichostrongyle worm burden and prompt anthelmintic treatment of the remaining calves was advised.

Winchester also investigated two outbreaks of PGE. In the first trichostrongyle-type eggs were identified in faecal samples from three 4-month-old calves with worm egg counts of 1,700 to 2,300 in individual animals. In the second three faecal samples were received from 4-month-old calves which had been brought in at 6-weeks of age and more recently had been scouring profusely. Faecal worm egg counts again revealed clinically significant trichostrongyle-type egg counts with up to 2,150 epg, but in addition, *Salmonella* Dublin was also isolated from two of the samples.

Shrewsbury investigated 10 outbreaks following identification of significant worm egg counts. Nine cases were in calves aged between 2 and 9 months of age with trichostrongyle counts as high as 2,400 eggs per gram. Mortality was only reported on one premises with 4 deaths of 6 affected dairy calves in a group of 20 which were aged 4 months. The tenth case was a Limousin stock bull which was dull and diarrhoeic and had a count of 950 eggs per gram.

Further cases affecting older animals were also described. The PGE was diagnosed in an 18-month-old Longhorn steer that had had diarrhoea and weight loss for approximately 6 weeks and Langford described a case in an 18-month old Hereford heifer in poor body condition exhibiting ventral oedema and an unremitting diarrhoea.

Bloat

A very well grown four-month-old Blonde d'Aquitaine heifer was found dead without showing premonitory signs. She was recently weaned and housed in a group of 50; the calves were fed 2 kg of a barley based mix daily (spread over two feeds) plus ad lib silage. Post mortem findings were consistent with bloat and acidosis; the oesophagus showed a classic "bloatline" (picture). No cause for the grain overload was established, as there is sufficient feed space and no break outs had occurred. The farmer has reduced the grain intake of the group.

Fasciolosis

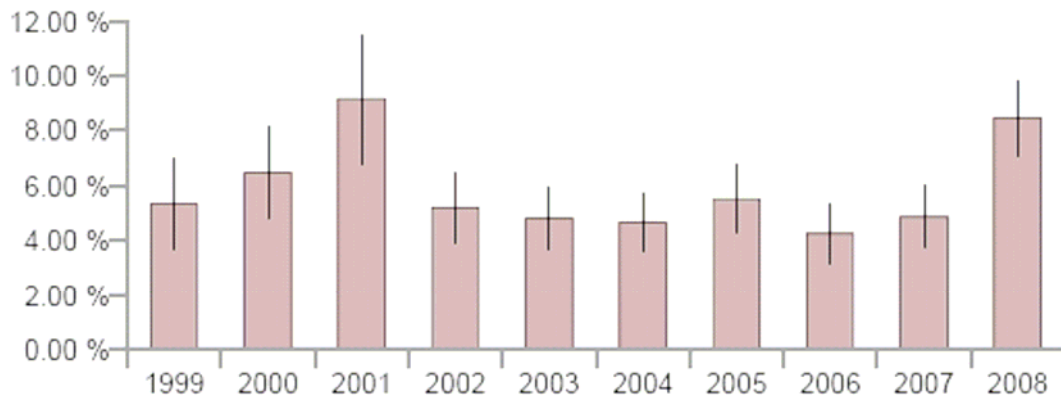
One 20-month old Aberdeen Angus cross steer in a group of 38 was found moribund and treated symptomatically but died overnight and was submitted to Langford. The principle post mortem finding was the liver which essentially consisted of a hypertrophied right lobe with only a vestige of the left lobe remaining. Also massively thickened bile ducts containing copious yellow green flocculent debris with both immature and mature flukes present and a distended gall bladder having overall dimensions of 8 x 23 cm. Additionally parts of the liver exhibited haemorrhagic tracts typical of acute infestation.

In this liver all three manifestations, acute, subacute and chronic fasciolosis were evident.

Carmarthen diagnosed the condition in a 12 month old Hereford cross heifer with ill thrift and diarrhoea.

Nationally there is evidence of an increase in fasciolosis in cattle predisposed by the favourable weather conditions for the parasite. Which is expected to continue into the next quarter. Cattle farmers should be reviewing their liver fluke control plans with their veterinarians.

Figure 1
VIDA Incidents of Bovine Fasciolosis (As a percentage of diagnosable submissions)
July-September 1999-2008



(Vertical bars indicate 95% confidence limits)

Johne's Disease

Shrewsbury reported forty diagnoses of Johne's disease made on 39 premises. The age range, for submissions where details were stated, was from 18 months to 11 years. Most were in dairy herds (29 cases), which included two beef breed stock bulls, 8 were in suckler herds and 3 were in fatteners. Diagnosis was made by ELISA alone in 24 cases, ZN identification of typical acid fast bacteria in faeces for 9 cases and using both tests for 7 cases.

Respiratory Diseases

Multifactorial aetiology

Bronchio-alveolar lavage samples submitted from a group of three-month-old calves that showed a sudden acute onset of respiratory disease were examined for the involvement of viruses, bacteria and Mycoplasma. IBR, PI3 and BRSV were not detected on fluorescent antibody testing (FAT). However, *Mannheimia haemolytica* and *Pasteurella multocida* were both isolated by bacteriological culture and *Mycoplasma dispar* was isolated by PCR and DGGE (denaturing gradient gel electrophoresis). These results suggested a multifactorial aetiology for the respiratory disease in this group.

Other Diseases

Babesiosis

An adult suckler cow purchased with a calf at foot became recumbent the day after being purchased. The attending veterinarian considered the blood to be 'watery' whilst blood-sampling the cow for macromineral levels and subsequent examination revealed the ventral surface of the cow to be covered in ticks. Penrith confirmed a diagnosis of Babesiosis examination on performing blood smears.

Psoroptic mange

Carmarthen confirmed a further case of psoroptic mange in cattle. A Belgian Blue cross calf which had been purchased from a market with its dam in May, developed pruritus and skin lesions in June. Treatment with an ivermectin product and a synthetic pyrethroid spot-on to protect against fly strike seemed to improve the condition until housing. At housing scabs and pruritus were evident over the shoulders (fig.2) and the tail head of the calf, its dam and, to a lesser extent, others housed in the same group. Treatment of the whole group with a 4 per cent permethrin pour-on on three occasions at two weekly intervals resulted in clinical improvement by the second application. It is thought likely that the case is linked to others previously described by Carmarthen, which have been refractory to ivermectin treatment. Suspected lack of efficacy was reported to the VMD.

Figure 2

Lesions of Psoroptic Mange on the shoulders of an affected animal



Acute necrotising encephalopathy

A diagnosis of acute necrotising encephalopathy, likely to be due to clostridial epsilon enterotoxaemia was reached, following post-mortem examination of a nine-month-old suckler calf at Sutton Bonnington, which presented with ataxia and blindness. A second calf had also presented ataxic with nystagmus, culminating in convulsions. Clinical signs had followed the move of a group of 33 to a rich clover aftermath with waste bread and cake fed as a supplement. It was suspected that the dietary change and high starch content of the bread and cake predisposed to clostridial overgrowth and toxin production. The

outbreak was short lived and no further cases occurred following the cessation of feeding bread.

SMALL RUMINANTS

Alimentary tract diseases

Parasitic gastroenteritis (PGE)

Two live ewe lambs out of a group of 116 from an organic farm were submitted for examination because six were noticed to have lost condition and appeared to be exhibiting submandibular swelling. The flock had been treated with albendazole, cobalt, and selenium eight weeks prior to submission and had been on relatively clean grazing since and moved every three weeks. Tachycardia was present (128 bpm and 120 bpm) and slight bruxism was heard in one; submandibular oedema was not particularly obvious. Conjunctivae exhibited severe pallor and heavy faecal soiling of the perineum was present in both. The abomasum of lamb one was empty of digesta but contained 32,800 *Haemonchus contortus* and 9,600 *Teladorsagia/Ostertagia* spp., while that of lamb two contained 2,500 *H. contortus* and 1,500 *Teladorsagia/Ostertagia* spp. The small intestines contained 16,800 *H. contortus*, 4,800 *Teladorsagia/Ostertagia* spp. and 13,600 *Cooperia* spp. in lamb one and 6,100 *Cooperia* spp and 300 *Trichostrongylus vitrinus* in lamb two. A worm egg count on lamb two, revealed 33,850 Trichostrongyle-type eggs per gram. It was strongly recommended that the organic farmer commence a regular monitoring regime in conjunction with his practitioner and commence treatment immediately.

Newcastle diagnosed parasitic gastroenteritis in three Swaledale lambs following the loss of 17 animals from a group of 80. Counts of up to 99,000 Trichostrongyle type eggs per gram were recorded in faeces along with high total worms counts of mainly *Teladorsagia* in abomasum and *Cooperia* species in small intestine. Adult lungworm were also seen in the airways of all three animals.

Leahurst also diagnosed haemonchosis in 6-month-old lambs from the same farm where 15 lambs had died during the previous 6 weeks.

Macrocylic lactone resistance

An incident of macrocyclic lactone resistance reported by Carmarthen last month was investigated further. On the affected farm, suspicions were raised by the lack of clinical improvement in lambs given an oral moxidectin treatment. The majority of the lambs were treated with a levamisole, but 10 were untreated and a veterinary supervised faecal egg count reduction test (f.e.c.r.t.) was carried out using an oral ivermectin product. There was an 83.5% reduction in trichostrongyle-type egg count, with a lower 95% confidence limit of 41.3%, indicating ivermectin resistance. *Teladorsagia/Ostertagia* species were the only species detected as surviving treatment. Benzimidazole resistance was also confirmed.

On another farm, investigations into a long history of ill-thrift in both ewes and lambs led to all anthelmintic classes being tested in a veterinary supervised f.e.c.r.t. There was a 62% reduction in faecal egg count after oral ivermectin, with only *Teladorsagia/Ostertagia* spp surviving treatment. Benzimidazole

resistance was also confirmed and there were suspicions of levamisole resistance, but egg numbers were low. Sequential ivermectin and levamisole treatment appeared fully effective, reducing egg counts to zero. A report on the suspected lack of efficacy was submitted to the VMD in each case.

Fasciolosis

Winchester diagnosed acute fasciolosis in a 6-month-old Texel cross lamb that was found dead, one of four sudden deaths in a group of 150 lambs. Typical liver pathology included punctate lesions over its surface with fibrin tags, and immature fluke were identified on the cut surface.

Acute fasciolosis was also diagnosed by Langford in a group of 200 sheep on a Somerset Moor following the sudden deaths of three over a five-day period. Post-mortem of one affected animal revealed a large amount of bloody fluid in the abdominal cavity and large numbers of immature fluke seen in a scrape of a cut liver section. In another case in a affecting a Dorset flock, three purchased ewes died with one exhibiting nervous symptoms prior to death.

Ruminal acidosis

Ruminal acidosis was diagnosed as the cause of death of a fattening lamb submitted to Newcastle. It was one of five which had died suddenly during the course of a week. The rumen contents included a large amount of barley and had a pH of 4.2. Ulceration of the abomasal mucosa was also evident.

Carmarthen also diagnosed a case in a Texel ram lamb from a group of 55 selected for finishing, two of which had died over a period of four days after housing. A large proportion of barley grains was present in the ruminal contents that had a pH of 4.4.

Respiratory Diseases

Pseudomonas stutzeri

Extensive purulent exudate was seen throughout 70% of the lungs including a large portion of the caudal lung lobes and extending into the airways of a four-year-old Woodland Whiteface ewe following post-mortem examination at RVC. The ewe had a history of chronic respiratory disease unresponsive to antibiotics. Poorly circumscribed nodular lesions were visible in the dorsal surface but these were not the typical abscesses seen in CLA, with exudate spreading throughout the underlying parenchyma. A fibrous pleuritis was present. Pure cultures of *Pseudomonas stutzeri* were cultured from the lung. This particular organism is an opportunistic pathogen not commonly encountered in veterinary or human medicine. It has been rarely reported in humans associated with empyema, abscesses and pneumonia, particularly in immunocompromised individuals.

Other diseases

***Bibersteinia trehalosi* septicaemia**

Penrith diagnosed *Bibersteinia trehalosi* septicaemia in Swaledale lambs that had died suddenly. No clinical symptoms were seen in the four affected lambs from the flock of 110. The organism was isolated in pure culture from lung and liver. The lambs were not vaccinated.

RVC also diagnosed the disease affecting a seven-month-old lamb which had been found dead. Petechial haemorrhages were seen in the neck and heart and the lungs were diffusely congested.

Winchester diagnosed the condition in lambs from two separate premises. On one unit, 3/100 10-month-old lambs were found dead and a carcass at post mortem showed widespread petechiation with enlarged congested lymph nodes, *B. trehalosi* was isolated in septicaemic distribution. In the second incident, four lambs again aged 10-months died over a two week period

PIGS

Reproductive diseases

PRRS

A litter of aborted fetuses, of varying sizes and some of which had been mummified was submitted to Thirsk from a large breeding unit. These piglets were born from a gilt which had received PRRS vaccine. Post-mortem examination revealed a large range in size of pigs with severe mummification in some. Many fetuses had oedema of the head, and one foetus in particular had marked haemorrhages throughout the subcutaneous tissue and pinpoint haemorrhages in the kidney which were quite marked. Culture was unrewarding but PCR from this foetus was positive by PCR for the European strain of PRRS virus. In addition, histopathology revealed predominantly mononuclear inflammatory cell infiltrates in heart and liver, which suggested a viral aetiology and possibly iatrogenic.

Alimentary tract diseases

Swine Dysentery

Bury reported two outbreaks of swine dysentery, both in indoor all-in, all-out finisher units geographically distant from one another. In the first, the disease was confirmed on a unit with no previous history of infection. Five of 25 22-week-old pigs were seen to have blood flecked diarrhoea and two died. A reddened colonic mucosa and bloody intestinal contents were found in an on-farm post-mortem examination. The source of infection was suspected to be a neighbouring SD positive unit which was cleaning out with birds being a possible means of transmission.

In the second, *Brachyspira hyodysenteriae* was detected by PCR in faeces from 21-week-old pigs with diarrhoea; a group B salmonella was also isolated. Although swine dysentery was previously diagnosed on this unit in 2006, the unit was considered clear of SD and infection was strongly suspected to have entered with the pigs which were supplied from a rearing unit where the stockman also looked after pigs on SD positive units.

Langford also diagnosed the disease as the cause of ill thrift and diarrhoea in a group of 40, 10-12 week-old growing pigs.

Salmonella typhimurium U288

An outbreak of scour in six-week old weaners on a Contract Rearing Unit was investigated by Bury. Four dead animals were examined, the consistent finding being necrotising enteritis and colitis. *Salmonella* Typhimurium phage

type U288 was isolated from these pigs. A Salmonella sampling visit to this farm was carried out.

Respiratory diseases

Mycoplasma Hyopneumoniae

Four 12-14 week old pigs were submitted for necropsy. Many weaned pigs on the unit had shown signs of pneumonia despite vaccination with a single-dose *Mycoplasma hyopneumoniae* vaccine, but serology from 10 pigs indicated field exposure in 18-week-old pigs. The unit was reportedly PRRS free. Two pigs submitted for post mortem demonstrated a purulent pneumonia, one pig had classic Glasser's disease and the fourth pig had lesions typical of Enzootic Pneumonia (EP). *M.hyorhinis* was isolated from three carcasses and *M.hyopneumonia* was isolated from the fourth pig's lungs. Investigations are ongoing as to why the vaccine did not provide protection; the incident was reported to VMD.

Neurological diseases

An outbreak of nervous disease in 6 to 8-week-old piglets was investigated by Winchester. Four affected pigs were submitted for post mortem examination which revealed fibrinopurulent meningitis in one carcass and a generalised polyserositis in other carcasses. Septicaemia involving *Streptococcus suis* type 2 was confirmed despite an on-farm vaccination programme against this organism. This may have been a new strain introduced into the herd, and for which the vaccine did not give adequate protection. A SARS report was sent to VMD.

BIRDS

Poultry

Femoral Head Necrosis

Penrith diagnosed femoral head necrosis following post-mortem examination of ten, 48-day-old broiler chickens from a flock with a history of birds going off their legs and increased mortality. *Staphylococcus aureus* was isolated from five of the six femoral heads cultured, while *E.coli* was isolated in the sixth.

Erysipelas

RVC diagnosed septicaemia caused by *Erysipelothrix rhusiopathiae* as the cause of death in five turkeys out of 520 that were due to be slaughtered at the beginning of December. The birds were being found dead with no premonitory signs. Post mortem findings included petechial haemorrhages in the heart and pericardium, enlargement and congestion of the spleen, and in one case haemorrhagic enteritis was evident. Gram positive rods were seen on smears from heart blood. The organism was isolated from a range of tissues in two of the birds, including a hock joint and bone marrow.

Spirochaetal enteritis

Winchester investigated poor egg production and abnormal droppings affecting a large commercial layer unit. The possibility of intestinal spirochaetosis was suspected, and following necropsy of eight affected birds *Brachyspira intermedia*, *pilosicoli* and *innocens* were isolated. *B. intermedia*

and *B. pilosicoli* are recognised intestinal pathogens in layers and the clinical signs reported were consistent with this finding.

QX Strain of Infectious Bronchitis

In early September, respiratory signs in 5 of 17 chickens in a hobby flock prompted submission of two Sussex birds to Truro for post-mortem. Both birds showed evidence of a conjunctivitis, tracheitis and nephropathy at post mortem examination. Subsequent testing revealed IB virus which demonstrated an antigenic relationship to the QX strain in one-way HI serology. This case represents the third isolation of IBV QX from backyard chickens in Great Britain over the past 14 months which has resulted from VLA scanning surveillance activities.

Blackhead

Histomoniasis was diagnosed on four separate occasions by Langford typically affecting growing turkey poults. Birds showed a range of signs including some more suggestive of respiratory problems but at post mortem in all cases there were the typical lesions of hepatic necrosis. Histological examination of these lesions revealed granulomatous necrotising hepatitis with invasion of cells by rounded bodies typical of histomoniasis.

Mycoplasmosis

Shrewsbury investigated the deaths of 10 birds from a group of 120, which had been on the premises for 2-3 weeks. They were eight week old birds for the Christmas market. The birds apparently had not looked particularly well when purchased. A live and dead bird were submitted for examination and respiratory disease was evident with the live bird mouth breathing and it had a markedly swollen head with distension of the sinuses, the left eye was closed and there was swelling of the eyelids. Gross signs of sinusitis were present and denaturing gel electrophoresis (DGGE) indicated the presence of *Mycoplasma gallisepticum*, a recognised primary pathogen.

Gamebirds

Deaths in thirty, 20-week-old pheasants from a flock of several thousand were reported. The birds were losing weight and going off food and water, and then dying quickly. Seven birds were submitted to Penrith and examination of the respiratory system revealed that all had significant gapeworm infestations. There was also significant enteric parasitism.

MISCELLANEOUS SPECIES

Camelids

A 3½-month-old alpaca with ill-thrift was examined post-mortem. The primary finding was a pharyngeal injury with an accompanying infection. The most likely cause of this was considered to be a dosing gun injury.

A homebred two-year-old alpaca female affected with lethargy and dyspnoea for 16 days was found to have miliary radio-opaque lesions in the lungs by radiography of thorax and was submitted to Bury for necropsy. The alpaca came from a group of 18 of mixed age up to 10-years-old. The last alpaca brought into the herd was in 2004. The only other resident domestic animal on site was a dog. The alpaca grazed permanent pasture and had potential contact with wildlife. Millitary lesions were present in the lungs liver and spleen

(Figure 3). Large numbers of acid-fast staining organisms typical of *Mycobacterium* species were detected in ZN-stained smears from the lesions. The gross lesions and detection of acid-fast staining organisms indicated a diagnosis of tuberculosis; TB cultures are in progress and this case was reported to the local Animal Health Office.

Figure 3.
Milliary TB lesions affecting the lungs of an Alpaca



Luddington also identified white foci in the liver and spleen of an alpaca cria which was subsequently diagnosed as a lymphoma.

A 4-year-old alpaca was submitted to Winchester for post mortem examination, it had apparently suffered a chronic skin problem then deteriorated and died. The skin of the ventral abdomen, inguinal and axillary areas was thickened with large areas of crusting and alopecia, sarcoptic mange was confirmed. The alpaca also had concurrent haemonchosis with *Haemonchus contortus* worms evident in C3. Up to five other adults were similarly affected in a group of 25.

Reindeer

An 18-month-old male reindeer that died shortly after it was discovered in a recumbent state was submitted to Thirsk for post-mortem investigation. The animal was in a poor body condition. Post-mortem examination revealed parasitic gastroenteritis and bronchitis with a worm count of 18, 900 *Ostertagia leptospicularis* in the abomasum. Histology revealed large numbers of lungworm larvae with an associated inflammatory response in

sections of the lung. The abomasal parasite burden and lungworm infestation were considered the most likely cause of death.

Water Buffalo

Carmarthen diagnosed *Yersinia pseudotuberculosis* infection in two of three, five month old water buffalos that had severe diarrhoea. Necropsy of the first affected animal indicated parasitic gastro-enteritis. All others in the affected group of 14 were then treated with an avermectin but one other died and a third was euthanased when it became recumbent. *Y.pseudotuberculosis* was cultured from the intestinal tract of both carcasses and from two further faeces samples from diarrhoeic animals presented at the same time. It is possible that debility caused by parasitic gastro-enteritis allowed this infection to become established. There was extensive sloughing of the mucosa of the small intestine and severe congestion of the mucosa of small and large intestine, and of the ileo caeco colic junction in the third carcass. There were also pin-point ulcers in the caecum. Further investigations are under way including identification of the nematode parasites in the first buffalo to be necropsied and environmental sampling on the farm of origin.

WILDLIFE

Red Squirrel

Two juvenile red squirrels, which were found dead within 100 metres of each other, were submitted to Penrith from an area where the squirrels spent 'most of the time scratching'. Both animals had a very severe infestation of sucking lice, and both were in thin body condition with evidence of anaemia. The submitter, in a detailed history, indicated that the animals came from an area in which he considered there was a high density of red squirrels, mostly young, suggesting a good breeding season. He observed that they were involved in antagonistic behaviour with 'noisy scolding and chasing' among the individuals. The high population density and contact behaviour may have predisposed to the ectoparasite infestation.

Starlings

Poxvirus was detected in samples of skin taken from a Starling (*Sturnus vulgaris*) with raised nodular lesions on the eye lids and wing.

Harbour Porpoise

A juvenile harbour porpoise that live stranded in poor body condition was found to have a parasitic bronchopneumonia in addition to a heavy whale lice infestation colonising numerous skin wounds present on the animal (Figure 3). A group B *Salmonella* was isolated from lung and a *Brucella* species in septicaemic distribution underlining the need for hygienic precautions when handling these cases.

Figure 3
Whale lice colonising skin wounds in a juvenile harbour porpoise

