

THE VETERINARY PATHOLOGY REPORT

Australian Society for Veterinary Pathology
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CLOSING DATE FOR COPY: 2 December 1988.

2.

PRESIDENT'S PAGE (Peter Phillips)

As less than 25% of members returned the questionnaire about next year's Conference and AGM the executive has decided that it has no Mandate to overturn the 1986 AGM resolution to hold the 1989 conference on the East Coast of Australia. For those interested, the breakdown of voting of 40 respondents was:

1ST PREFERENCE: Adelaide 23 (Vic 6, NSW 5, WA 3, NT 3, Qld 3, SA 2, Tas 1)
Geelong 10 (Vic 3, NSW 3, WA 2, Tas 1, O/S 1)
Sydney 4 (NSW 1, Qld 1, ACT I, O/S 1)
Perth 3 (All informals from W.A.!)

2ND PREFERENCE: Adelaide 6 (WA 4, Vic 1, Qld 1)
Geelong 14 (NSW 4, NT 3, Qld 2, Vic, WA, SA, TAS, ACT all 1)
Sydney 6 (Vic 3, NSW 3).

To me the questionnaire has clearly shown that a number of our own members are becoming restless with either having to battle for funds to attend the AGM or not being able to attend. Such members' non-attendance is a loss to the conference and indeed we must guard against then leaving the Society in disenchantment, I am fore-shadowing a motion at the next AGM that a proportion of our AGM/Conferences be held away from the Eastern States.

The executive agrees that we will try to arrange a conference theme of "Exotic Disease Pathology" at AAHL in Geelong next year with the likely dates being May 13-14.

I have received a response from the Minister for Agriculture and Rural Affairs, NSW to my letter suggesting re-evaluation of the NSW Government decision to close the Armidale RVL. The reply states that the Department is to investigate the effect that the closure of Armidale would have on the ability of the remaining laboratories to process samples, and should the investigation indicate a need to retain Armidale, an equivalent saving would need to be made elsewhere in the animal health system. The Government's budget strategy requires a productivity saving of \$2.835 million from NSW Agriculture and Fisheries in 1988/89, to be achieved by deletion of 77 positions and reduction in operational expenditure. Perhaps it is up to Departmental Officers to be more pro-active in recommending ways and means of increasing productivity without reduction of services, even if this does incorporate some fee-for-service proposals.

STOP PRESS

AGM & Conference 1989

THE 1989 CONFERENCE VENUE WILL BE AAHL GEELONG
THE THEME WILL BE EXOTIC DISEASES AND THE DATE WILL BE 13 AND 14 MAY 1989.
Peter Hooper is examining the possibility of a training course for a small group of veterinarians in the following week, as well.

PLEASE MARK THESE DATES IN YOUR FORWARD PLANNING CALENDAR NOW.

3.

REGISTRY NEWS

NATIONAL REGISTRY OF DOMESTIC ANIMAL PATHOLOGY

As at 5th September, 1988 the Domestic Animal Pathology Registry at Glenfield has classified pathologic materials from close to 1,000 cases. They are composed of good quality slides with identifiable lesions. The file is currently made up as follows:

Cattle	-	245	cases
Sheep	-	202	“
Pigs	-	41	“
Goats	-	74	“
Horses	-	109	“
Deer	-	7	“
Dogs	-	156	“
Cats	-	49	“
Poultry	-	52	“
Miscellaneous	-	7	“

Each case has on the average five H and E sections. In addition there are about 3,000 colour transparencies depicting gross and microscopic lesions.

We require more material from all species, but especially pigs and deer. It is up to members of the Society to get good materials to us in the form of nicely stained H and E sections and/or paraffin blocks. A suggestion is that each veterinary diagnostic laboratory designates one of their veterinary officers to select five or so cases each month for recutting and sending to the National Registry. We will accept and file any entity. The more cases of each condition the better for reference and teaching purposes.

Donations of original colour transparencies or permission to copy originals would also be appreciated.

DONATIONS

We are delighted that widespread financial support of the Registry is continuing with donations of \$500 from The Graduate School of Tropical Veterinary Sciences at Townsville and \$500 from The Bureau of Rural Resources, Department of Primary Industry, Canberra. Further donations, particularly from Universities and State Departments of Agriculture would be most welcome.

The Registry has been busy not only classifying material but catering to the needs of veterinary pathologists in Australia. Quite a few requests have been received for loan of gross or microscopic transparencies. Several veterinarians have already visited the Registry for study sessions and others, some of whom are travelling thousands of miles, are booked in for later in the year.

A brief videotape of the Registry's activities complete with sound track has been made and is available for loan. It will be suitable for increasing the awareness of chief veterinary officers and others who may then care to financially support the Registry,

The Registrar made a short trip to The Graduate School of Tropical Veterinary Sciences at Townsville in August for teaching sessions with students and staff and will be making a similar trip to the Central Veterinary Laboratories, Adelaide in late October.

W.J. HARTLEY
REGISTRAR

4.

Registrar's Schedule

August	29-3 Sept	Glenfield	November	3 -4 5-20	Glenfield Taronga
September	5-9 10-25 26-30	Glenfield Taronga Glenfield		21-25 26-27 28-2 Dec	Glenfield Taronga Glenfield
October	1-2 3-7 8-23 24-28 30-2 Nov	Taronga Glenfield Taronga Glenfield Adelaide	December	3-16 17-1 Jan	Taronga Leave
			January	2-8 9-13 14-15	Taronga Glenfield Taronga
				16-20	Glenfield

National Registry of Domestic Animal Pathology,
Regional Veterinary Laboratory,
Roy Watts Road, Glenfield. NSW 2167
Telephone:(02) 605 1511 Ext. 246
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UPDATE ON THE TARONGA PATHOLOGY REGISTER

This collection of pathological materials has now been in existence for almost three years. During this period we have gradually accumulated a fairly comprehensive selection of tissue sections etc. relating particularly to our native animals, but we also include exotic non-domestic animals. As at 24th August, 1988 we have close to 3,000 cases on file, made up from the following animal groups:

Macropods	429	Perissodactyla	23
Monotremes	57	Artiodactyla	182
Koala and Wombat	157	Miscellaneous mammals	10
Possums and Gliders	157	Snakes	92
Dasyurids	138	Lizards	51
Bandicoots and Bilby	55	Crocodiles & Alligators	23
Bats	38	Turtles & Tortoises	35
Primates	105	Amphibia	21
Rodents & Lagomorphs	156	Fish	106
Marine Mammals	55	Birds	752
Carnivores	140	Invertebrates	2

In the collection we have about 12,000 glass slides, 5,000 paraffin blocks and 2,800 colour transparencies of gross and microscopic lesions. The cases are given a Registry number and sections are filed by card and computer according to species, source, submitter's number, morphologic diagnosis, and aetiologic diagnosis (when known). Data is readily retrievable on print-out if required.

To make the collection as comprehensive as possible we require several examples of each entity for each species or family. This can be achieved with the co-operation and assistance of members of our Society. So it is largely up to you to either continue, or to start, to send case materials to the Registry for evaluation and selection for inclusion in the collection.

5.

We welcome any materials from any disease process affecting our native species and caged birds, no matter how common the entity may be, as long as the sections are from freshly dead tissues (i.e. not too autolysed) and are nicely processed and a copy of the history is included. We prefer to receive all sections from the case in question rather than just one representative section. All materials sent will be acknowledged and cements will be included if requested.

(Bill Hartley)
Zoo Animal Registry,
Taronga Zoo,
PO Box 20, Mosman. NSW 2088
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Fax: (02) 969 7515

STATE REPORTS

Western Australia (Dave Pass)

MURDOCH UNIVERSITY, SCHOOL OF VETERINARY STUDIES

CEREBELLAR ABIOTROPHY IN AUSTRALIAN KELPIE DOGS (J. Thomas)

Over several years we have seen kelpie dogs with an inherited cerebellar disease at Murdoch. A trial mating was carried out between a dog with clinical disease (presumed homozygote) and a bitch with one clinically affected parent (presumed heterozygote). Four of eight pups were severely affected with intention tremors, truncal ataxia, loss of menace response and proprioceptive deficit. Three other pups had decreased proprioception and the eighth pup was unavailable for examination. Six pups were necropsied between six weeks and six months of age. Lesions were confined to the cerebellum where there was necrosis of Purkinje cells at six weeks with loss of granule cells. In older dogs the lesion was indistinguishable from hypoplasia. Some Wallerian degeneration was present in younger pups in white matter tracts and there was vacuolation in roof nuclei.

Anecdotal evidence suggests that cerebellar disease is common in working kelpies with farmers/breeders killing affected puppies. There are, however, more subtle clinical signs which are overlooked. I would be very interested in any suspected dogs, and in particular their pedigrees.

RENAL ADENOCARCINOMA IN A HORSE (C. Huxtable)

The case was a 10 year old pony with a history of sudden collapse, anaemia and apparent haematuria. A large mass was palpable by rectal examination on the right side in the kidney region.

At necropsy, the right kidney was much enlarged (30 x 20 x 10cm) due to a spherical tumour occupying the pelvis and medulla which compressed the cortex. There was considerable perirenal haemorrhage and large focal haemorrhages in the tumour. There were no metastases. The tumour was a renal carcinoma of low mitotic rate and little evidence of invasive behaviour.

ALBANY REGIONAL LABORATORY (Ruth Reuter)

CHARGING FOR SERVICES

To date the laboratory has charged fees for service for companion animals, birds and some parasitology procedures. However, the W.A. Government, in its wisdom, has now decided to follow its cousins in other States into the area of "User Pays" regardless of class of livestock. The effect on our "Veterinary Pathology Report" submission remains to be seen!!

6.

OXALATE NEPHROSIS IN SHEEP

Four 18-month-old wethers were found dead and 20 others lethargic and scouring in a mob of 600, one week after being put on a paddock containing a large amount of sorrel and dock. Euthanasia and post mortem of one affected animal showed grossly enlarged, soft, bulging kidneys with grey-white discolouration of the cortex. On urinalysis the specific gravity was 1.004 and large amounts of protein were present. Severe oxalate nephrosis was seen histologically. Similar findings were present in two other sheep post mortemed in the field. Although the animals were shifted to a kikuyu-based pasture, forty more sheep died over the next two weeks. Analysis of sorrel and dock samples revealed very high levels of soluble and insoluble oxalate.

SCOURING ASSOCIATED WITH STINKWORT INGESTION

Twenty, ten-month-old Merino wethers died and 160 scoured profusely in a mob of 540 which had been grazing 90 acres of a ryegrass/stinkwort pasture for five months. Scouring had begun shortly after introduction to the pasture. There was some response to treatment with sulfamethazine, but none to drenching for parasites. The lambs had been vaccinated twice against enterotoxaemia. On post mortem of several animals the small intestines were oedematous, haemorrhagic and contained many white nodules in the wall. These were associated with grossly detectable stinkwort spicules. Histologically there were multiple foreign body granulomas surrounding fragments of plant material throughout the intestinal sections.

CAMPYLOBACTER ABORTION *

Thirty five abortions, forty stillbirths and five weak lambs occurred in a mob of 400 full-mouth Merino ewes. Post mortem of one foetus showed thick sheets of fibrin coating the liver and large irregular areas of necrosis in the hepatic parenchyma. Many curved Gram-negative rods were seen on smear of stomach contents and Campylobacter fetus, var. intestinalis was isolated on culture.

* (See also report on P.13. ed)

EQUINE DEGENERATIVE MYELOENCEPHALOPATHY

Following an accidental fall in training, an 18-month-old Thoroughbred filly exhibited signs of ataxia which were most pronounced on the left side. The animal failed to respond to conservative treatment and was euthanased. The head and neck were submitted to the laboratory. There were no gross abnormalities in brain, spinal cord or vertebral column. On histology there was axonal swelling, demyelination, reactive gliosis, and phagocytosis affecting the pons, medulla, dorsolateral and ventromedial tracts of the spinal cord.

SUSPECT TRACE MINERAL TOXICITY IN GOATS

Two, six-year-old Angora goats, one male and one female, from a herd of 180 were submitted to a veterinary practitioner, with a history of reluctance to move and emaciation. On post mortem both goats were thin, with complete absence of body fat. In the female, there was what was described as a "pancreatic tumour". Samples submitted to the laboratory were fresh liver for trace mineral analysis and formalised heart, skeletal muscle, liver and kidney from the male goat. The pancreatic lesion was not included.

Biochemical results were:

Cu: 665 ppm.	Mn: 16.3 ppm.
Zn: 583 ppm.	Se: 0.31 ng/g
Fe: 1670 ppm.	B12: 1.15 ug/g

7.

On histology the kidney showed necrosis of convoluted tubular epithelium, dilated tubules containing protein and cellular debris, and large amounts of yellow-brown granular pigment in epithelial cells. The lesions closely resembled those described for experimental zinc toxicity in sheep. Since pancreatic lesions have also been described, a section of the so-called "tumour" would have been interesting in this case.

Reference:

- Allen J. M. and Masters H.G. (1985). Renal lesions and, tissue concentrations of zinc, copper, iron and manganese in experimentally zinc intoxicated sheep. *Res. Vet. Sci.* 39: 249-251.
Allen J. G. et.al (1986). Acute zinc toxicity in sheep. *Aust. Vet. J.* 62: 93-95.

QUEENSLAND (Fraser Trueman)

ANIMAL RESEARCH INSTITUTE

Dr Bill Callow has retired as Director of Pathology, and Russell Rogers is the acting director. Rob Pierce has returned from Davis, California after completing his M. Sc in pathology. Rob is now heading the regional laboratory at Rockhampton.

Michael Hill, long time and well known pathologist from ARI, has resigned and joined the Sydney stock exchange. Michael's expertise and good humour is missed from ARI.

CASE REPORTS

Encephalomyocarditis

Nine of 28 Duroc-cross pigs at 28 weeks of age died suddenly without evidence of disease signs. Serous fluid with fibrin strands was present in the pericardial sac, and multiple white foci were present on epicardial and cut surface of the heart. Extensive myocardial necrosis and mononuclear inflammatory cell infiltration of the heart were seen histologically. Tissues were not available for virus isolation, and a diagnosis of Encephalomyocarditis virus infection was made on the basis of histopathology.

Fish Kill Due to Pesticide Toxicity

Exposed sandy beach of a canal system was treated at low tide for biting midge control by council workers. The next morning numerous small dead fish of multiple species were present in the canal.

Chlorpyrifos used in the spray was confirmed to be the cause of death by chemical analyses on tissues of dead fish. Liver and stomach content of mullet contained 12.6 and 11.9 mg/kg Chlorpyrifos; liver and stomach content of bream contained 5.2 and 4.9 mg/kg Chlorpyrifos.

Herpes-like Virus Infection of Black Moors in Quarantine

Fifty-three of 125 Black Moors imported from Singapore had died by the 8th day of quarantine and 2 live fish were examined at the laboratory. Histology of one fish showed extensive necrosis of haematopoietic tissue with cytopathology suggestive of viral infection in haematopoietic tissue and spleen.

Haematopoietic cells of kidney and reticuloendothelial cells of spleen had dilated nuclei with sparse marginated chromatin (cygnet ring). Rarely the nuclei contained a clearly defined large eosinophilic inclusion body. Electron microscopy of ultra thin sections of formalised kidney showed numerous herpes-like virus particles in nucleus and cytoplasm of haematopoietic and reticuloendothelial cells. All fish of the total batch of 500 in 4 tanks were destroyed and the tanks disinfected. Total natural loss over 14 days was 263 fish. Virus isolation was attempted in blue gill fry caudal trunk and rainbow trout gonad cell lines from pooled kidneys of a sample of fish but did not succeed.

8.

Trema aspera (Poison Peach) intoxication claimed the lives of 3 circus camels. The animals had been tethered for 3 days in a line of trees against a scrubby bank. Symptoms included anorexia, sweating, abdominal pain, diarrhoea recumbency and death, necropsy revealed subcutaneous petechial haemorrhages, and haemorrhages throughout the intestinal tract. Massive acute hepatic necrosis was seen on histology, and poison peach was readily found on the scrubby bank. There was evidence that the plants had been browsed.

Cestrum pargui. Poisoning due to green cestrum was responsible for the death of 51 young sheep from a mob of 500. The animals were held in a paddock awaiting slaughter. Post mortem revealed red mottled livers, which was confirmed histologically as severe acute periacinar necrosis. Inspection of the paddock found an almost pure stand of green cestrum.

CENTRAL VETERINARY DIAGNOSTICS

AVIAN CASES (Geoff Mitchell):

We had a recent series of cases from an aviary of small parrots including peach-faces and crimson wings in north Queensland. One adult bird had hepatitis, one adult had erythroblastosis and a fledging had papovavirus splenitis and hepatitis. Papovavirus is still the main worry as it is occurring in new flocks all the time and may possibly damage the immune system and allow other diseases to become more pathogenic. We have now seen 3 separate cases of erythroblastosis in medium sized parrots. This is a disease affecting the bone marrow, probably viral, and there is no known treatment.

CANINE LEPTOSPIROSIS (Geoff Mitchell)

We have recently diagnosed a case of leptospirosis in a pup from the Atherton tableland and believe this may not merely be an isolated case.

History

Initially one pup was presented with lethargy, anorexia, pyrexia, jaundice and mild diarrhoea. Significant lab findings were a markedly increased ALP and moderate bilirubinaemia. The pup was not anaemic for its age and no blood parasites were seen. These findings were suggestive of leptospirosis but serology was equivocal. This pup survived after treatment with fluids and pen strep.

A second pup from the same district was presented with suspect parvo but later developed jaundice. Lab. data on it are tabulated below:

Chemistry			Haematology*		Ref. Range
Urea	46.9	2.7-6.6	Hb	62.0	98.0-110 g/L
Creatinine	0.56	0.06-0.18	PCV	18.0	.31-.35 L/L
Bilirubin	69.0	0 -8.0	WBC	13.9	11.4 -15.4 x 10 ⁹ /L
C bilirubin	28.9	0 -3.0	Pits	Adequate	
ALP	1700.0	20.0-70	L.Copenhagenii titre		1:800
ALT	121.0	15.0-70			
PO4	4.74	0.9-2.2	Pups	6-8 weeks*	

Several possible interpretations include severe haemolytic anaemia (low PCV, elevated bilirubin, prerenal azotaemia), primary cholangiostatic disease (high ALP, normal ALT, elevated bilirubin), severe primary renal disease (elevated urea and creatinine), or a combination of all of these. To help in the diagnosis it is important to know that L. copenhagenii causes a haemolytic disease that commonly affects both liver/bile duct and kidney.

9.

This pup was necropsied. Histopathology showed there was marked biliary retention in the bile canaliculi while hepatocytes showed dissociation and mild fatty change. Moderate tubular nephrosis was present and a mild to moderate interstitial pneumonia was present. Together these findings are typical of a septicaemic toxic insult and the *L. copenhagenii* titre of 1:800 confirmed our diagnosis.

Although canine leptospirosis is considered to be a common disease by serologic surveys, it is not frequently recognized clinically. This may be because subclinical or mild disease occurs in up to 70% of cases. In our experience, adult dogs often presented initially with depression and vomiting and are commonly jaundiced. Differential diagnoses include pancreatitis and acute gastro-intestinal disease. Bile duct obstruction may occur in either of these conditions. From what Chris Belford has seen in NZ the disease can occur in urban and farm dogs of any age.

UNIVERSITY OF QUEENSLAND

KIKUYU GRASS POISONING (Roger Kelly)

A cow in the latter part of lactation was well at the evening milking, after which she was let into a lush stand of kikuyu grass, which had been slashed 6 weeks before, during a continuous wet spell. She was found dead near the water trough at daybreak the next morning, severely bloated and with a long trail of rumen liquor running from nose and mouth. At necropsy, the most notable feature was the bulk of the rumen, which was distended with moist kikuyu grass and a small but tense gas pocket. There was a "bloat line" in the oesophagus at the thoracic inlet, and other signs of agonal redistribution of blood.

The case was considered to be consistent with kikuyu grass poisoning, in view of the history and gross pathology, rather than a case of frothy bloat. Rumen histology was not performed, although rumen mucosal lesions are mentioned in reports of this disease from NSW and South Africa. There was no evidence of fungal infection or insect attack of any significant severity in the grass in this case.

AEROMONAS HYDROPHILA SEPTICAEMIA IN CROCODILES

This winter we have seen several cases of this infection in both estuarine and freshwater crocodiles from local tourist traps. The animals are well-nourished, but often have skin ulcers which are heavily infected, and there are bacterial emboli in most organs, and *A. hydrophila* is readily cultured from them. With all the tourist activity here at the moment, the crocodiles are not being encouraged to hibernate, and it is possible that the combination of induced activity, stress and cold-induced inhibition of immunity are combining to produce the disease.

New South Wales (Jim Rothwell)

REGIONAL VETERINARY LABORATORY ORANGE

FOOTROT IN SHEEP (John Seaman)

By far the most important single disease, in terms of number of cases submitted and economic loss to farmers, seen at RVL Orange in the last four months has been footrot in sheep. The diagnosis of footrot is usually made on clinical examination in the field, with microscopic examination of smears taken from active lesions undertaken at the laboratory when the diagnosis is in doubt.

10.

Up until the end of August a total of 179 cases have been received at RVL Orange in 1988 investigating foot conditions in sheep. Of these, 102 had smears positive for Bacteroides nodosus (i.e. footrot), 51 were suggestive of foot abscess and a further 23 negative for B. nodosus. Of the 179 cases for the year, 131 have been received during the months of June, July and August with 85 of these positive for B. nodosus. Many of these cases involved significant numbers of sheep with morbidity frequently over 20% in sheep noticed lame for the first time and veterinary investigation requested.

Of all the footrot positive cases, over half have been received from the Bathurst and Carcoar Pasture Protection Board districts and included 44 cases (43% of total positives) received during June, July and August. These districts cover the higher tableland country from Lithgow, Oberon, Bathurst, Blayney, Orange and extending down to Cowra. As such they experience typical cold wet winters with the maximum daily temperature usually below 10° C. Although this winter has been relatively mild there is good evidence that the traditional thinking that footrot will not spread below a mean ambient daily temperature of 10° C (Graham and Egerton 1968, AVJ 44 : 235) needs to be reconsidered.

Footrot has attained a high profile in New South Wales of late with the Department of Agriculture formulating a strategic plan for control of the disease based on extension of footrot free protected areas. Proposals are also underway from industry, AVA, Sydney University and Department of Agriculture to introduce a footrot free accreditation flock scheme. Regional Veterinary Laboratories have added to their diagnostic armory culturing of B. nodosus to establish virulence on selected cases.

PSEUDOMONAS AERUGINOSA ABORTION IN A COW (John Seaman)

A 5 year old Friesian cow in a herd of 30 was reported "off colour" and displaying a blood stained discharge from the vagina. The cow was estimated to be 6 months pregnant following natural service. Two days later the cow aborted with the foetus measuring 45 cm crown to rump (24 weeks gestation). On necropsy there was excess blood stained fluid in body cavities of the foetus but apart from some autolysis major body organs were grossly normal.

Routine bacteriology cultures of liver, lung and foetal stomach contents from the aborted foetus plus the vaginal discharge submitted initially produced a moderate to heavy pure growth of Pseudomonas aeruginosa. Histopathology indicated inflammatory changes in the liver and kidney suggestive of an infectious condition. The isolate was sensitive to neomycin but resistant to a number of other antibiotics. Following treatment with neomycin the cow made a complete recovery.

Overseas literature indicates Pseudomonas aeruginosa to be a cause of sporadic abortion in cattle. In this case only the single animal was involved and no further problems have been reported.

ABORTIONS IN SHEEP (Mark Carrigan and John Seaman)

Interesting cases of abortion in sheep seen recently at RVL Orange include -

- (1) Listeriosis: Involved 30% abortions in a flock of 200 Merino ewes. Smears of foetal stomach contents contained large numbers of Gram positive bacteria consistent with Listeria monocytogenes and the organism isolated in pure growth from cultures of liver, lung and foetal stomach contents.
- (2) Campylobacteriosis: 5% of a flock of 250 maiden crossbred ewes aborted, older ewes were not affected. Smears of foetal stomach contents contained organisms consistent with Campylobacter while cultures of membranes and foetal stomach contents yielded Campylobacter foetus subsp. foetus.

11.

- (3) Toxoplasmosis: 10% of a flock of 90 Polwarth ewes produced either dead or very weak lambs approximately 7-10 days before lambing was to commence. Smears and cultures for bacterial pathogens were negative but on histopathology there were scattered focal malacic lesions with focal gliosis throughout the cerebral cortex. Toxoplasma I FAT on foetal heart, blood from two aborted lambs gave a titre of 1024. The ewes had been fed hay during pregnancy and feral cats were a problem on the farm.

NEONATAL PASTEURELLOSIS IN PIGS (Mark Carrigan)

In a litter of 12, 5-7 day old pigs, eight developed acute respiratory distress, elevated temperatures and died within 24 hours. Necropsy of five pigs showed a severe fibrinous peritonitis and pleurisy. There were fibrinous adhesions between the intestines, liver and spleen, and large fibrin strands free in the abdomen. The thorax contained excess fluid, the lungs were oedematous and congested and there were fibrinous adhesions between the lungs and the ribs. Histologically the liver contained multiple small foci of hepatocellular necrosis which were often colonised by bacteria, and large strands of fibrin and necrotic debris were attached to the capsule. The lungs had pulmonary collapse, congestion and severe septal oedema accompanied by a diffuse low grade polymorph infiltration. Moderate to heavy growths of Pasteurella multocida were recovered from the liver, lung, kidney and peritoneal fluid of the three pigs cultured.

REGIONAL VETERINARY LABORATORY - ARMIDALE

The dark cloud of closure is still hanging over the laboratory. The review committee appointed by the Minister visited Armidale on the 6th and 7th September to receive submissions and delegations. There have been very strong representations from the New South, Wales Farmers, the Pastures Protection Boards, C.S.I.R.O., local A.V.A. and many other groups and individuals.

There is very strong support for the retention of the laboratory as an integral part of the states diagnostic and disease surveillance service.

The problem seems to be that we have to convince economists of the value of the service to the state and national primary producers,

The indications are that there will be an introduction of fee for service, covering a wide range of submissions. We are hoping this will not be imposed on clearly identified diagnostic submissions.

We all hope to be here to receive your next publication, keep up the good work.

CASE REPORT

CRYPTOSPORIDIA IN QUAILS - (Steven Hum. Peter Best)

A commercial quail breeder experienced upper respiratory tract infection in his breeder flock. Clinical signs consisted of epiphora with swelling of periocular tissues and sinusitis evidenced by nasal discharge and swollen infraorbital sinuses. Coughing was not noted.

Initial erythromycin treatment appeared successful but clinical signs reappeared and repeat treatment had no effect.

12.

The shed contained mixed age birds with extremely dense housing, and without artificial heating. The number of air changes were less than optimal as noticed by the high ammonia level on walking into the shed. Three adult birds with the early appearance of a watery ocular discharge were submitted for necropsy. All birds in good body condition had epiphora and swollen nasal sinuses. Larynx, pharynx, and trachea appeared normal. Histologically significant findings were confined to the nasal cavities. The ciliated border of respiratory epithelium and the surface epithelium of mucous glands were heavily colonised by Cryptosporidia in all birds. In some places the epithelium was ulcerated and the mucosa was infiltrated by mononuclear cells and heterophils. No Cryptosporidia were detected in larynx, pharynx or trachea. Bacteriology was negative. The slide agglutination test for *Mycoplasma gallinarum* was positive in 2 birds, however, they had no lesions indicative of mycoplasmosis.

Four weeks later 6 birds were post mortemed from the same flock. Three were clinically healthy and 3 showed signs of upper respiratory infection. Only 1 of the clinically affected birds had Cryptosporidia in the nasal epithelium.

We hypothesised that the adverse environmental conditions in the shed helped to establish the infection. The organism was present in large numbers in the acute-subacute stages of the disease and gradually disappeared during convalescence. It was interesting that no Cryptosporidia were found in the larynx, pharynx or trachea which are the "conventional" sites, and the infection may be missed if nasal cavity is not examined. A cross section cut through the nares can be routinely processed and was very useful in this case.

Victoria (Susan Friend)

REGIONAL VETERINARY LABORATORY, BENALLA

DIMETRIDAZOLE (EMTRYL-R) TOXICITY IN BUDGERIGARS (Malcolm Lancaster)

A budgerigar breeder, concerned about the possibility of trichomoniasis in his birds, gave all his flock Emtryl medicated water. The dose rate for the first three days was approximately 4g/5L of water, but this was increased to 5g/5L for the next two days. The medicated water was removed on the 6th day when dead, convulsing or depressed birds were seen.

Four birds were submitted to the laboratory. One was dead, 2 were convulsing, and the other was depressed. Necrotic neurons were seen in the cerebrum of the first three birds. Two further depressed birds were seen on the seventh day, but these recovered.

Five out of six affected birds were rearing young. The combination of increased water consumption in these birds, plus the higher than recommended 3g/5L rate of dimetridazole was the probable key epidemiological features in this episode.

AUSTRALIAN FISH HEALTH REFERENCE LABORATORY

EPIZOOTIC HAEMATOPOIETIC NECROSIS (IRIDOVIRUS) IN RAINBOW TROUT(John Humphrey)

Prolonged moderate mortalities, 20-30 fish per day, were reported in Rainbow trout *Salmo gairdneri* from a fish out facility. Histopathological examination of moribund fish showed extensive necrosis of haematopoietic tissue in the kidney, with splenic necrosis and mild hepatocellular necrosis. Intracytoplasmic basophilic inclusion bodies were common in effete mononuclear cells in kidney and spleen. Numerous inclusion bodies were present in the hepatocytes of one fish.

13.

Cytopathic effects typical of EHN iridovirus were obtained on virological isolation and the presence of an iridovirus morphologically similar to EHN was demonstrated by electron microscopy at the Australian Animal Health Laboratory.

The virus is common in redbfin, Perca fluviatilis, in waterways of South Eastern Australia, and causes recurrent annual kills characterized by acute haematopoietic necrosis. Experimentally, typical clinical disease and pathology has been reproduced in Macquarie perch, Macquarie australasica. Silver perch, Bidyamus bidyamus, galaxias Galaxidus didus and mosquito fish Gambusia affinis, as well as redbfin and rainbow trout.

REGIONAL VETERINARY LABORATORY - BAIRNSDALE

POLIOENCEPHALOMALACIA IN HEREFORD COWS (Kit Button)

A mob of 55, 3-5 year old Hereford cows with calves at foot was purchased at Yarram on 10 June 1968 and transported to a property near Traralgon the following day. They were yarded without water on the night of 11 June before being released onto a paddock containing Capeweed (*Orctotheca calendulacea*) on 12 June. A total of 13 cows developed nervous signs including ataxia, muscular tremors, head pressing, blindness, grinding of teeth and twitching of ears. First signs were noted on the afternoon of 12 June. A total of 10 cows died. Treatments given included calcium and magnesium salts and thiamine.

A range of laboratory samples showed hypocalcaemia and hypomagnesaemia in some but not all cows. Kidney lead analyses were negative as were tests for nitrate/nitrite. Necropsies were performed on 2 cows. There were no noteworthy gross lesions other than pulmonary congestion and oedema and poor filling of the rumen and GI tracts. Both brains showed vacuolation of deep laminae of the cerebral cortex and unequivocal necrosis of a variable number of associated neurons, so confirming a diagnosis of polioencephalomalacia (PEM). PEM is a rare but well recognised sequel to water deprivation (Padran D. Cornell Vet 70: 153-159, 1980).

TOXOPLASMA MYOCARDITIS AND ENCEPHALITIS IN A PADEMELON (Ian Jerrett)

Two of 15 Pademelons (small macropods) were found dead at a nature park. Lung taken from the first animal showed lesions suggestive of sub-acute cardiac failure and examination of a variety of tissues from the second animal revealed a severe non-suppurative myocarditis and a non-suppurative encephalitis. Large numbers of cysts containing tachyzoites were seen in myocardial fibers and these stained positively for Toxoplasma gondii using an immunoperoxidase technique.

BOVINE ABORTION DUE TO YERSINIA PSEUDOTUBERCULOSIS (Ian Jerrett, Ken Slee)

Yersinia pseudotuberculosis serotype III (the common bovine sero-type) was isolated in heavy pure growth from the stomach contents of a fresh foetus with pneumonia and serositis. A severe placentitis was also present. The abortion was the third on the property within a month. Similar cases of severe foetal serositis, pneumonia and placentitis from which *Y. pseudotuberculosis* was isolated have been seen previously at the laboratory on 2 occasions, in 1981 and 1983. While this diagnosis is uncommon they are of interest in that the lesions closely resemble those of Campylobacter foetus infection, and the organism, unless present in heavy pure growth, may be mistaken for a contaminant or missed because of its slow growth on culture media. A selective culture medium is now available and all abortions seen during 1988 will be cultured for Yersinia. In an extensive examination of "full investigation" abortions (Jerrett *et al* Cornell Vet 74: 8,1984), 6.7% of cases showed evidence of infection, yet culture did not reveal a pathogen. It is probable that some of these undiagnosed infectious abortions were due to Y. pseudotuberculosis serotype III. Submissions during 1988 should elucidate this situation.

14.

ORCHITIS AND EPIDIDYMITIS IN LAMBS (Deborah Seward)

Twenty of 70 merino ram lambs, 6 to 7 months old developed acute orchitis and epididymitis. Testicles were initially soft and swollen and epididymides enlarged and fluid filled. Testicles and epididymides later became firm.

Fluid aspirated from the scrotal sac and semen samples were submitted for microbiological examination. Histophilus ovis (Haemophilus somnus) was cultured from all samples. H.ovis/H. somnus part of the normal flora in the mouth and reproductive tracts of cattle and sheep is known to cause a range of infections in both species. It is interesting to speculate why a member of the normal bacterial flora should produce an outbreak of disease as in these lambs. No predisposing factor was demonstrated.

POISON PEACH HEPATOPATHY IN GOATS (Ian Jerrett)

Five of a mob of 80 goats at Bega died over a one week period following access to a neighbour's paddock containing the native Peach Leaf Poison Bush (Trema aspera). Autopsy of 2 does revealed swollen friable livers and excess yellow peritoneal fluid. Haemorrhagic periarterial hepatic necrosis was evident on histological examination. Similar hepatic lesions had been seen in goats dying on this property in previous years but the cause had remained undetermined.

Plant material was obtained from the property and fed to 2 sheep which became moribund within 48 hours of dosing. Identical hepatic lesions to those in the goats were seen at autopsy. Trema aspera grows in coastal regions from Northern Queensland to far east Gippsland.

REGIONAL VETERINARY LABORATORY HAMILTON

LYMPHADENITIS IN CAMELS (Cor Lenghaus)

Abdul and his mate are camels which have born in the region for about 5 years. Last year they grazed in a paddock next to an abattoir where they developed (sub) cutaneous abscesses. Clinical examination recently revealed scarring over sub maxillary and prescapular lymph nodes with new abscesses developed in prescapular and popliteal nodes. Grey-yellow pus with a toothpaste-like consistency was aspirated, which yielded a heavy growth of Corynebacterium ulcerans.

Five other camels recently imported from the Northern Territory also had sporadic lymph node abscesses, apparently already present before arrival.

PARASITISM OF BANDICOOTS (Cor Lenghaus)

The "Hamilton Bandicoot" (Perameles gunnii) is among the most endangered marsupial of mainland Australia. In an attempt to learn more about the disease status of the local colony, the laboratory has examined numbers of bandicoot road-kills and cat-kills. One of 7 bandicoots examined recently had a very heavy stomach worm burden, with parasites provisionally identified as Physaloptera sp. Another had pinpoint foci of consolidation throughout the lungs, containing larval nematodes, as yet unidentified.

Nervous system disease due to Toxoplasmosis has been reported. One poorly preserved female bandicoot with pouch young, had a focal myocarditis and encephalitis, consistent with T.gondii infection, although pseudocysts could not be found.

15.

ADENOVIRUS INFECTION IN SHEEP (Cor Lenghaus)

Some 400 12-months old sheep were yarded, drenched with selenium and copper and released the following day. One sheep died in the yards and 10 other deaths occurred during the subsequent 5 days. At post mortem of one sheep, the submitting veterinarian reported congested lungs without other abnormalities. The concern was that these sheep might have received toxic doses of copper or selenium, although clinical and post mortem findings made this an unlikely diagnosis.

Histologically there was a severe bacterial bronchopneumonia. There was hyperplasia of the bronchial epithelium, with amphophilic/basophilic intranuclear inclusion bodies present in some of the proliferating epithelial cells. There was an acute nephrosis, with similar inclusion bodies seen sporadically in collecting tubular epithelium.

The provisional diagnosis of Adenovirus infection will be confirmed by ultra structure of fixed tissues. The significance of this infection in the flock, or in sheep generally is unknown. Adenoviruses have been isolated from sheep overseas, but their role in disease is unclear.

LISTERIOSIS OF FALLOW DEER (Jonathan Webber)

A 4 year old doe was one of a fallow deer herd given access to silage 2 days before she was noticed to be staggy and with her head turned to one side. Within 24 hours she was recumbent, apparently blind with her head turned firmly into the flank. She was unresponsive to thiamine, corticosteroids and tetracycline and died about 15 hours after becoming recumbent.

The head was submitted for examination with a provisional diagnosis of listeriosis, given the known exposure to silage.

Listeria monocytogenes Type 4 was cultured from the brain. A disseminated, focal suppurative encephalitis was seen in the mid brain and brain stem, histologically, with numerous Gram positive coccobacilli present in the lesions.

South Australia (Robin Giesecke)

CENTRAL VETERINARY LABORATORIES – ADELAIDE

AMYLOIDOSIS IN AN ABYSSINIAN CAT (V.I,Tham)

In mid March this year a dead 1 year-old female Abyssinian cat (of pure U.S. Abyssinian descent) was submitted for necropsy.

In mid January this year this cat gave birth to 4 stillborn kittens 4 days overdue (1st litter) but she appeared in excellent health. However, towards the end of February this year she showed loss of body weight but her appetite and behaviour appeared normal. She appeared normal at 6 p.m. but was found dead in her bed (normal position) at about 12 p.m. on 12/3/88.

Post-mortem examination revealed a fairly poor anaemic carcass, a ruptured moderately enlarged liver leading to marked haemorrhage into the peritoneal cavity which very likely would have been the cause of death. The kidneys were enlarged. There were no other significant gross changes.

Histologically there was moderately large amount of amyloid deposited in the interstitium of the medullary region and in all the glomeruli of the kidney. Amyloid deposit was also noted in between chords of liver cells. Other hepatic changes were hepatocellular fatty change, dilated sinusoids and areas of haemorrhage.

16.

There appears to be a familial predisposition towards the development of amyloidosis in pure U.S. Abyssinian cats.

ORGANIC AVICULTURE (Peter Phillips)

An amateur aviculturist had lost 9 finches in an aviary over a period of 23 days. He took the last of the dead birds, a star finch, to his veterinary practitioner who forwarded it to the laboratory for necropsy. A post-mortem examination revealed a multiple miliary abscessation of the liver. Histopathology and bacteriology confirmed the diagnosis of Yersiniosis (*Y. pseudotuberculosis*).

On relating the diagnosis to the owner and discussing possible sources of the organism it was found that he had economised on space in his backyard by having a compost heap inside the aviary, thus creating an ideal environment for the exchange of the bacteria from rodents to birds.

LETTERS TO THE EDITOR

Job Opportunities for Veterinary Pathologists:

As you may know, I joined the S.A. Health Commission in March. Since have joined the public health sector, I have become increasingly aware of opportunities I had previously not recognised for vet. pathologists. The project I am currently working on involves review of a large amount of toxicology data, largely generated in the USA by board-certified veterinary pathologists. While it seems obvious to me that a vet. pathologist is an appropriate person to undertake such a review, you'll find that such work usually goes to a science graduate in a health department.

Hence, with the doors closing for veterinary pathologists in Departments of Agriculture (particularly regional laboratories) it may be prudent to look further afield and consider "crossing the line" moving into the public health rather than agricultural industry support area.

I am pleased to see that Wanda Haschek-Hock has recently joined the National Institute of Occupational Health and Safety in Sydney, and hope we may have more vet. pathologists in the public health sector in the future.

TAMMY UTTERIDGE