THE VETERINARY PATHOLOGY REPORT

Australian Society for Veterinary Pathology
Regional Veterinary Laboratory,
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PRESIDENT'S REPORT

Hopefully it is not "the quiet before the storm" but the affairs of our Society appear to have progressed smoothly over recent months. This edition of "The Veterinary Pathology Report" contains the customary excellent contributions from our State correspondents as well as information on our various activities.

Our first priority is the 1987 Annual Conference which is to be held in Sydney on 23 May 1987 and this newsletter contains a plea for scientific contributions. A recent letter which I received from Tom Hungerford indicated that the notes are rolling in for the Post-graduate Refresher Course - "Through the Naked Eye - The Gross Pathology of Domestic Animals". Those involved deserve our hearty congratulations and thanks; I'm not amongst then yet! Finally there is firm hope that we may be successful in obtaining financial support for the Australian Registry of Veterinary Pathology.

With regard to the subject of communication raised in our last edition I would like to extol the virtues of the Werribee Saturday Pathology Seminars. These gatherings are held once a quarter and are attended by representatives from most diagnostic laboratories in Victoria, South Australia and Wagga Wagga. They provide an ideal informal forum for the interchange of interesting cases, ideas and gossip. Although the remainder of Australia is a bit more extensive than "Mexico" I feel that the other states/universities should give consideration to organising similar regular meetings. The remaining Veterinary Schools, including Townsville, are ideally situated to act as focal points. Profits to be obtained are immense and far out-weigh any trouble in organisation, which after all, is minimal.

Our term as the Executive of The Australian Society for Veterinary Pathology is slowly drawing to an end. Now is the time for members to be considering who they would like to hold the reins for the succeeding two years. We have found the experience both rewarding and enjoyable and are convinced that others would find the same. Nomination forms, which are available from the Secretary, Ian Links, have to be returned at least 7 days before the Annual Meeting on 23 May 1987.

"Through the Naked Eye - The Gross Pathology of Domestic Animals"

Arrangements for the above refresher course which is to be held in Sydney from 18-22 May 1987 are well in hand. There are a number of points regarding the course that members ought to consider.

a) Advertising

The specialty of Veterinary Pathology will be on show for the entire profession during this course. I think that we should be justifiably proud of the fact that we have been able to gather together such a fine array of lecturers without drawing upon overseas talent. However in the final analysis, the success of the course will be judged by those who attend. Therefore I would like to make a plea for you all to advertise and point out the virtues of the course to your colleagues. Various laboratory newsletters would provide an ideal medium for this purpose.

b) Preparation of Lecture Notes

I recently received a gentle reminder from Tom Hungerford regarding my own tardiness in submitting notes. All lecturers should remember that the notes have to be with the Post-graduate Foundation by 1st December 1986. Meeting this deadline will serve two purposes, i.e. you will get paid and the Foundation will have ample time to print the proceedings and distribute them to the attendees.

c) Kodachromes

Only one lecturer has sought assistance with obtaining Kodachromes for the course. Mark Carrigan at the Regional Veterinary Laboratory Orange would sincerely appreciate hearing from anyone who has Kodachromes depicting diseases of the alimentary tract and liver in cattle. If any other lecturers are experiencing difficulty in obtaining Kodachromes could they please advise John Glastonbury of their requirements?

d) Video Films Depicting Post-mortem Techniques

We have not been swamped with offers of video films for use during the lunch hour sessions during the course. If you have such films could you please let John Glastonbury at the Regional Veterinary Laboratory, Private Mail Bag, Wagga Wagga N.S.W. 2650 know the following details:

Title.
Length of film
The format in which the film is recorded.
The address and telephone number of the supplier.

1987 Annual Conference, The Australian Society for Veterinary Pathology

The 1987 Annual Conference is to be held in the J.D. Stewart Lecture Theatre in the veterinary school at the University of Sydney on Saturday 23rd May 1987.

Tony Ross is doing an excellent job organising the local arrangements including a dinner to be held on the evening of Friday 22nd May 1987. Once again the trade exhibit is being organised by John Searson. If you have any suggestions regarding the format of this display or companies who may care to participate could you please advise John as soon as possible.

As the conference will be only one day in length and we have to allow time for the annual meeting, we will only have time for about 12-16 scientific presentations by members. The presentations may cover such things as interesting cases, research findings, new techniques and the soliciting of material for research projects. We are now ready to receive contributions and they will be selected on the basis of order of receipt. They should be forwarded to the Secretary Ian Links at the Regional Veterinary Laboratory, Private Mail Bag, Wagga Wagga, N.S.W. 2650, and manuscripts should be prepared in the following manner:

* 1-2 pages in length including a brief introduction, methods, conclusions and possibly citing several major references on the topic.

* Type single spaced on A4 paper, using Letter Gothic 12 (or Prestige 12 or similar) type with a carbon ribbon.

* Leave 3.5 cm margin on the left and 2.5 cm margin on all other sides to allow for binding and trimming.

* Even if the text is brief, begin at the top of the page, and leave the remainder blank for notes.

* Remember the copy you send will be photocopied exactly as it appears for binding into the booklet. No corrections or errors please!

The Examinations for Entry into the Australian College of Veterinary Scientists

Seven to eight candidates have indicated their intention of undertaking the membership examinations in pathobiology in 1987. The written papers will be taken on 27th January 1987 and the oral/practical examinations will be held on 16th and 17th February 1987 in New Zealand, and 19th and 20th February 1987 in Sydney. The continuing large numbers of members of this society offering themselves for examination augurs well for the future of the pathobiology chapter and the specialty of veterinary pathology in this country.

Professor Rod Campbell from the University of North Queensland is soon to retire from his role as head examiner in pathobiology. On behalf of our society I would like to sincerely thank Rod for the excellent job which he has done in this role over a number of years and I am sure that most previous candidates will agree that he had a most understanding approach to candidates. Phil Ladds has assumed the role of Head Examiner and once again John Glastonbury will be acting as Assistant Examiner. Phil has indicated that over the coming months he will be soliciting Kodachromes from members of the society for use in the practical segment of the examinations.

The Australian Registry of Veterinary Pathology

You will be pleased to know that at last we appear to be making some progress in obtaining financial support for the establishment of the Australian Registry of Veterinary Pathology. As outlined in the previous edition we prepared a detailed proposal for funding from all states on a pro rata basis for consideration by the laboratory leaders. Malcolm Smeal, the Director of Animal Health Research in New South Wales performed a vital role in promoting our cause and as a consequence has obtained unanimous support from the laboratory leaders group.

The proposal is now to be placed before the next meeting of the Animal Health Committee which should take place during October 1986. With the support of the laboratory leaders we are quietly confident of its success. The outlays involved for each individual State are not great and are certainly considerably less than that claimed at the last meeting of the Animal Health Committee.

In the interim we wrote to Mr. Wal Fife, Liberal Member for Hume seeking his political support for the establishment of the Registry. On our behalf he made personal representations to Mr. John Kerin, Australian Minister for Primary Industries. Regrettably Mr. Kerin's response was relatively non-committal, basically re-stating the results of the previous Animal Health Committee Meeting. Nevertheless we feel that some political persuasion does no harm and would encourage you to also approach your local members on the subject.

Appeal for Material - Monotreme Diseases

I have been asked to present a paper on diseases of platypuses and echidnas at a Post-graduate Committee Refresher course. There is little published information and even anecdotal reports are scant. However there is probably material filed in diagnostic labs, especially those labs servicing zoos and fauna parks. I would be very grateful to receive paperwork, sections (or blocks) and Kodachromes of any monotreme cases on your files. Donations will be acknowledged in the paper and duplicate sections (if blocks are sent) will be filed in the Registry of Pathology at Taronga Zoo. Even reports with no significant findings are valuable. Contact Richard Whittington, Regional Veterinary Laboratory, P.M.B. Wagga Wagga. N.S.W. 2630. Ph: (069) 230 931.

Slide of the Month

Clive Huxtable would like to be advised of any member who would like to contribute slides-of-the-month in 1987, in particular anyone who has not yet contributed and feels that they have been left out. His address is, School of Veterinary Studies, Murdoch University, Murdoch, Western Australia. 6150 (Ph: 09 332 211).

Monoclonal Antibodies to Sheep Lymphocyte Surface Antigens

Mark Gorrell advises that several people have enquired about access to their monoclonal antibodies (Ref. A.S.V.P. Annual Conf. Proceedings, 1986 p: 1.9). In order to encourage research on ruminant immunology in Australia, the monoclonal antibodies are being made freely available for research by A.S.V.P. members and their colleagues. They do not require payment for them if you are in a critical funding situation, but in almost all cases researchers have donated $240 towards costs of production.

Enquiries can be directed to Ms. K. MacRae, Department of Veterinary Preclinical Sciences, The University of Melbourne, Park Drive, Parkville, 3052 Victoria.

Registry of Immunopathological and Cytochemical Techniques

Roger Cook and Paul Gill have been given the task of compiling this register, however at this stage the response has been nil.

If you have developed techniques in this area or have antisera against agents which could be utilised in such techniques then we want to know about them. Diagnosis (and research) on many diseases will in future depend on these techniques so lets get moving now. A good example is Mark Cornell's monoclonal antibodies to sheep lymphocytes. Other areas where such techniques would be valuable include detection of specific bacterial viruses in smears and tissue sections, e.g. Erysipelothrix, Brucella, Streptococcus suis, Leptospire, mucosal disease, IBR, Chlamydia, Listeria, fungi, fimbrial antigens, Parvovirus, cytomegalovirus, Marek's disease, etc. etc. The potential is there. Perhaps some of these techniques could be exploited commercially - if industry knows what can be done and what we need, then they wil1 be in a better position to assess the commercial viability of new products in this area. Roger or Paul can be contacted at the Regional Veterinary Laboratory, Wollongbar N.S.W. 2480 (Ph: 066 240 261).

They need to know the type of technique (e.g. immunoperoxidase, FAT etc.), what it is used on (smears, sections etc.), what it detects (e.g. Listeria), method of fixation (e.g. Bouins, heat fixation etc.), the method used and relevant references.

Membership Subscriptions

A financial statement, correct as at date of printing, is enclosed with this edition of Vet. Path. Report. The Treasurer advises that a large number of members are unfinancial. Please pay up as the constitution provides for deletion of unfinancial members.

STATE REPORTS

QUEENSLAND

University of Qld. - Roger Kelly

Nitrite poisoning in cattle: A classical outbreak occurred in a partial feedlot situation, where the animals were let out for a few hours/day to strip-graze green oats. Losses were associated with a period of rain and dull weather. Specimens for necropsy were pretty rotten, but a brownish tinge was evident, and a positive test for nitrite was obtained using the di-phenylamine-blue reagent on samples of aqueous humor.

Renal failure in guinea-pigs: We have a steady trickle of cases of ill-thrift and death in guinea-pigs from the local lab. animal breeding house; at necropsy, these usually have extra-renal evidence of renal failure (in particular, mineralisation of the gastric wall), and the kidneys are small, pale and slightly granular. The microscopic lesion is essentially segmental atrophy and stromal collapse, which appears to be taking place in the absence of any significant inflammatory reaction. Mature animals are affected, and it seems that the disease is a form of abiotrophy.

Pneumonia in guinea-pigs: The above population also suffers from sporadic cases of acute and sub-acute bronchopneumonia due to Bordetella bronchiseptica infection: usually there is a history of cold stress.

Animal Research Institute - Fraser Trueman

(Extracts from the Diagnostic Report, Pathology Branch)

Suspect EDDI intoxication in feedlot cattle: An outbreak of severe necrotizing tracheitis and purulent sinusitis in 60 young steers killed 25% and affected 90%, beginning 8-l0days after introduction to the feed-lot. The sorghum/barley/cottonseed-based ration had been supplemented with ethylamine dihydriodide (EDDI) at a nominal 125g/tonne as a foot rot preventive; the mixing may not have been thorough. Affected animals were febrile and responded to penicillin/streptomycin. There was no evidence of IBR in sections, and no virus was grown from five tracheal specimens. Two of five animals had a modest bronchopneumonia, from which Pasteurella multocida was grown, but all had the necrotizing and purulent tracheal lesions. EDDI supplementation was discontinued, and the problem has not yet recurred.

Suspected transplacental intoxication of calves with flumethrin: Seven calves, born on different properties, have shown flaccid paralysis and muscle fasciculation at birth. Their dams had been treated during pregnancy between 4 and 6 times with the acaricide flumethrin (a pyrethroid). Two animals were examined p.m.; one had been kept for 8 weeks after birth with no clinical improvement. The only lesions in both were wallerian degeneration in spinal cord and cerebellar white matter and brainstem.

Xanthorrhoea poisoning in calves: Four weaners of a group of 30 developed loss of condition. asymmetric hind limb ataxia and urinary incontinence associated with erect tail-base.

One was sacrificed and showed mild diffuse wallerian degeneration in spinal cord and brainstem. The lesions appeared to be more severe in the thoracic cord. In only one other instance of Xanthorrhoea poisoning has histological evidence of nervous tissue damage been observed (Munday, Mason & Hartley, AVJ 52:92-6,1976).

Streptococcus equisimilis infection in sows: A large piggery on the Darling Downs has had a 12-18 month problem with early farrowing and abortion after day 110. The prematures are weak runts.

Samples from reproductive tracts of affected sows were collected at slaughter within a week of abortion. Str. equisimilis was isolated from several sites in each of the 5 uteri submitted. Histological examination of each revealed mild to marked purulent endometritis, with large numbers of streptococci visible in sections. This organism was also isolated from a sow which had farrowed early and subsequently died, and from one of the piglets.

Fasciolosis in a donkey: This animal was from a badly-managed property at Birkdale, and had a broken foreleg and heavy nematode burden at necropsy, as well as a heavy liver fluke infection, which was judged to be chronic, with fibrosed bile ducts blocked by fluke, but no haemorrhagic tracks in the parenchyma. The flukes were identified as Fasciola hepatica. Faecal examination revealed fluke eggs.

Ringworm in pigs due to Microsporum nanum: After introduction of a gilt showing skin lesions to a 40 sow piggery, 20 sows developed similar skin lesions which soon spread to the growers. Treatment with 'Halamid' proved unsuccessful. Microsporum nanum was isolated from hair and skin samples.

James Cook University - Graduate School of Trop. Vet. Sc., Pathology Section - (Phil Ladds)

Interesting cases have included a large renal papillary adenoma in a horse, loss of an entire litter of pups with herpesvirus infection, dual infection of pox and mycotic dermatitis in a wallaroo, ulcerative dermatitis - septicaemia with Aeromonas hydrophila causing high mortalities in cane toads, and further cases of canine parvoviral myocarditis and feline infectious peritonitis.

Research findings of interest include recognition of a wide range of congenital abnormalities affecting the accessory sex glands of bulls and inability to isolate either Mycoplasma or Chlamydia from spontaneous cases of seminal vesiculitis or other accessory sex gland inflammations in the bull.

Combined immunological-immunocytochemical studies on the genitalia of rams indicate that the ram may differ from other species studied in having relatively high levels of IgA in semen – suggesting the presence of an active local immune system, especially in the accessory sex glands.

Veterinary clinical pathologists around Australia are advised that Professor J.H. (Tim) Lumsden is currently spending study leave at James Cook. He can be contacted on (077) 814 4398.

Queensland Department of Primary Industries. Animal Health Station, Oonoonba

Noteworthy recent cases and outbreaks include fatal babesiosis in a 7-week-old pup and a one-year-old dog, sudden death of a 6-year-old horse consequent to gastric-rupture at the site of a gastric habronemiasis lesion, and general lethargy, inappetence and incoordination in a mature saltwater crocodile (Crocodylus porosus); microscopic examination of both kidneys revealed massive uric acid deposits confirming a diagnosis of visceral gout - possibly consequent to Vitamin A deficiency.

Deaths of 20 of 100 goats in one farm were associated with haemorrhage, abdominal pain and recumbency. Clostridial enterotoxaemia was confirmed as the cause and toxins of Cl. perfringens Type D were demonstrated in gut content of dead animals.

WESTERN AUSTRALIA - Prepared by C. Huxtable

ALBAY REGIONAL VETERINARY LABORATORY (RUTH REUTER)

Epiphyseal dysplasia in cattle:-

In 1985 a new Simmental bul1 was introduced into a herd of Murray Grey Cattle. In his first breeding season he served females on two widely separated properties. The first group, consisting of eight heifers, produced five normal calves, two stillbirths and one failure to conceive. In the cow herd six calves out of 30 were born with skeletal abnormalities. A live seven day old affected calf was submitted to the laboratory for examination. The calf had severely bowed, medially rotated front and back legs and appeared stunted, but was bright and able to move rapidly.

On post mortem examination, the vertebrae were compressed. The shafts of the long bones were shortened with large mushroom shaped epiphyses covered by irregular articular cartilage. Microscopically there were large sheets and tongues of cartilage extending from the epiphyseal side of the growth plate into the epiphysis. Islands of cartilage surrounded by a thin layer of osteoid were seen in the epiphyseal centres.

Conditions similar to this have been described in humans due to ingestion of teratogenic compounds. The changes seen in this calf, in conjunction with the history, suggested this could have been the result of exposure to a teratogenic agent, rather than in hereditary problem.

Johne's disease in a bull:-

A two year old South Devon bull was imported direct to Western Australia from Cornwall, U.K. in 1982. He passed all routine screening tests at that time. In February 1986 he began to lose condition and scour intermittently. He was removed from the herd of 50 breeding cows with calves; however when he appeared to respond to symptomatic treatment, he was returned for mating. When he began to lose condition again the local practitioner submitted faecal and blood samples for Johne's disease. Strong positive reactions on complement fixation and agar gel diffusion, along with acid fast bacilli in the faeces gave a presumptive diagnosis of Johne's disease. Since this condition is considered 'exotic' to W.A. the bull was destroyed.

Post mortem examination revealed emaciation, prominent mesenteric lymphatics, and a grossly thickened small intestine with a characteristic 'corrugated cardboard' appearance. Large numbers of acid fast bacilli were seen on direct smears of the mucosal surface, and many epithelioid cells loaded with acid fast bacilli were present in the mucosa of the thickened intestinal sections. One hundred and eight other cattle and one sheep have been slaughtered with no further cases identified to date.

Oesophageal obstruction in a ewe:-

An 18 month old purebred Suffolk ewe was found dead unexpectedly. She was one of triplets which had been hand reared since an early encounter with a hungry fox had resulted in injury to her lower jaw. Two days before death she was seen apparently bolting her food and then regurgitating. On post mortem a large bolus of crushed lupins was occluding the oesophagus at the thoracic inlet. There was anterior congestion and posterior blanching of the carcase with severe tracheal haemorrhage and pulmonary atelectasis. One large lamb was present in the uterus. Death was attributed to bloat and asphyxiation following obstruction of the oesophagus.

Fowl pox and parasitism:-

Two six month old Leghorns from a backyard flock of 50 suddenly became weak, inappetent and depressed. Scabs had appeared on the face three days before. One of the birds died; the other was submitted for examination. It was a 'pathologist's dream' case!

There was extensive thickening, greyish discolouration and scaliness of the legs, feet and skin around the beak. Small hyperaemic circular lesions were present on the comb and around the eyes. The skin under the wings was featherless and brown in colour. The bird was dehydrated, with urate deposition on the pericardium. The crop mucosa was hyperaemic and oedematous. There were numerous tapeworms in the intestine.

Skin scrapings identified feather mites (Megninia) under the wings and scaly leg mites (Knemidocoptes) on the beak and legs. On histology acanthosis and ballooning degeneration of epidermal cells with large, eosinophilic, intracytoplasmic inclusion bodies suggested fowl pox. This was confirmed by the identification of avipox virus on electron microscopy. Sections of the crop showed inflammation with invasion of the mucosa by large numbers of Candida.

General:-

In addition to the above selected cases of interest, the laboratory has been kept busy with problems due to drench resistance in sheep, dermatitis and hair loss in goats, and gearing up for another onslaught of samples from suspect cases of foot rot.

MURDOCH UNIVERSITY (David Forshaw and Clive Huxtable)

Systemic viral infections in Gouldian Finches (Erythrura gouldiae):-

Two separate outbreaks of mortality in collections of gouldian finches have recently occurred. In one outbreak, 18 birds have died at the time of writing, the deaths occurring over a period of three months. Mostly young birds 4-6 weeks out of the nest are affected but occasional mature birds have also died.

Both owners report that they can detect that the birds are 'off colour' for up to a week before dying and obviously sick the day before.

Post mortem examinations of most of the birds has revealed enlarged pale yellow livers with multifocal small areas of haemorrhage scattered throughout. Enlarged congested spleens were seen in many birds and large subcutaneous haemorrhages were present in two cases.

Histologically, there were multifocal random areas of necrosis throughout the liver associated with the presence of large ballooned 'empty' nuclei, haemorrhage but minimal inflammation. Similar nuclei were seen in the spleen in some cases, the renal glomeruli in one case and the glands of the gizzard in another case where they were associated with a severe inflammatory response, destruction of epithelium and disorganization of the cuticle.

These changes have not been consistent. In some dead birds examined, a mild diffuse hepatitis and/or focal inflammatory infiltrates in the lamina propria of the gut were the only histopathologic findings.

The histopathology of the liver lesions associated with the ballooned nuclei is identical to that described in lovebirds by D. Pass in the A.V.J., 62, September, 1985 and it seems likely that this disease may also be due to a systemic papovavirus infection.

Attempts to culture a virus from the livers of affected birds in chicken embryo cell cultures have been unsuccessful. EM investigations are continuing.

Mycobacterium bovis infection in captive seals:-

As a follow up to the previous report, ten seals kept in quarantine since the confirmation of the infection were destroyed and necropsied. Of these, seven had reacted positively to intradermal tuberculin. At necropsy gross lesions were found in four of the seals with positive skin tests. None of the seals with negative skin tests had detectable lesions. Culture results are not yet available.

Skin lesions in cats:-

We have recently diagnosed deep pyogranulomatous dermatitis/panniculitis due to Nocardia spp. (2 cases), fast-growing Mycobacteria (2 cases), 'cat leprosy' type Mycobacteria (2 cases), Prototheca (1 case), Cryptococcus (1 case).

Canine chemodectomas:-

A series of these tumours have recently cropped up, one at the aortic body, two at the carotid body and one apparently arising from the glomus jugular and growing down into the oropharynx and invading the cranial cavity via jugular foramen.

ANIMAL HEALTH LABORATORY SOUTH PERTH

Suspected Superphosphate Poisoning in Calves - J. Dickson:-

A farmer 20 km south of Perth on sand plain country lost five calves over one week at the end of July. One hundred and twenty cows with four-five month old calves were run on old well established pastures which had been used for years without stock losses. After the first death the mob was moved into a second paddock.

Post mortems were done on three calves, one by a practitioner who reported localised enteritis and submitted tissues. The liver showed acute centrilobular necrosis. The other two calves were brought to the Animal Health Laboratories. Both showed purple bluish discolouration of the serosa of the rumen and abomasum when the abdomen was opened. The abomasum of one was ruptured and the wall was necrotic. The rumen epithelium had separated from the wall when the organ was opened and lay on the contents which appeared reasonably normal. In the second calf the abomasum contained about 25 litres of fluid, the wall was oedematous and tore easily. The mucosal surface showed large yellow necrotic areas. No evidence of scarring was found inside the rumen. Large infarcted areas were present in the liver and kidney. The gall bladder contained black jam-like material and the spleen was about four times the normal size with dark jam-like pulp. A clot of blood filled the duodenum and bloodstained contents were found as far as the caecum. Histopathology confirmed the liver and kidney changes but there was an intense rumenitis consistent with the ingestion of some irritant substance.

Results of bacteriological and parasitological examinations (including a search for Babesia) were negative.

One bush each of Oleander and Asclepias fruticosa were found in the paddock beside an old house without a surrounding fence. Their poisonous properties were noted and the Oleander had been trimmed by cattle over the years until it was tike an umbrella with the leaves at the 180-200 cm above ground level. The occupant of the house who was interested in dismantling old cars, had planted a fern tree next to the house and dead fronds had been cut off and left lying on the ground. Two old car batteries were found outside the paddock fence but had not been touched. A drain about 30 cm deep had been put across the paddock the previous week and had passed near to where old sheep yards had been bulldozed twenty years previously. Several Arum lily bulbs had been exposed in the drain but they did not appear to have been disturbed. Tissue tests for arsenic lead and zinc were negative. The only other change in management that occurred was the application of superphosphate and muriate of potash (3:2) at 150 kg/ha to the two paddocks in the week prior to the deaths. At this time there was a considerable spell of dry cold sunny weather and the

fertiliser lay on the short pasture of grasses, clovers and capeweed for several days. Application of superphosphate in similar circumstances is common but stock losses associated with it have not been reported in Western Australia. The farmer was confident that it was spread evenly and that there were no heaps.

Since muriate of potash (KC1) has a pleasant salty taste it could be attractive to calves to lick and the possibility of excessive superphosphate ingestion exists. After consulting New Zealand workers on the toxicity of superphosphate in cows (Swan et al., 1952; Clark et al., 1976) and to sheep ((O'Hara and Cordes, 1982; O'Hara et al., 1982) it seems likely that superphosphate poisoning did occur.

I would be interested in any comments. If anyone has a translation of Romanenko's (1954) paper in Russian, 1 would appreciate a photo-copy.

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"Non-Rabies" Negri Bodies – R. Peet

A Great Dane died in the Byford Quarantine Station after a prolonged illness. The local practitioner had diagnosed pneumonia and the dog had responded temporarily to antibiotics, a bony lump on the left distal radius was also evident and diagnosed on X-rays as osteosarcoma. This was subsequently confirmed histologically. The animal was autopsied at Animal Health Laboratory and ½ the brain sent chilled to Geelong A.A.H.L. for routine rabies exclusion tests. The other half was examined histologically at Animal Health Laboratory and eosinophilic intracytoplasmic inclusion bodies in neurones were found in areas around the hippocampus and in the cerebellum. These varied in size and shape, but were predominantly oval and approximately twice the size of an erythrocyte.

The consensus amongst pathologists at Animal Health Laboratories was that they should be considered Negri bodies until proven otherwise. A.A.H.L. was informed and the F.A.T. for rabies which had proven negative was re-done with the same result.

E.M. studies of these bodies are now proceeding at Animal Health Laboratories to try to identify them.

SOUTH AUSTRALIA - Prepared by Peter Phillips.

Dr. Earle Gardner resigned as Chief Veterinary Pathologist at Central Veterinary Laboratories on 26th September and. has taken up duties at Ruakura Animal Health Laboratory, Hamilton, N.Z. Earle's experience and physical presence will be sorely missed at C.V.L. and we wish him well in his new post. Peter Phillips is acting Chief Veterinary Pathologist at C.V.L.

A review of both Central Veterinary Laboratories and the South East Regional Laboratory to rationalise services provided by them is under way. This review may lead to some shifting of priorities and resources.

T.B. in Deer (Peter Phillips, Vin Ling Tham). The saga continues with the finding, histologically, of T.B. in a fallow deer from a property unconnected with the herds of the earlier out break. Unfortunately only formalinised tissue was submitted and no culture was able to be undertaken.

Psittacosis (Peter Phillips). Late winter, early spring brought a spate of cases of psittacosis in caged parrots. In several cases, despite recent media publicity, owners were unaware of the public health implications.

Deer Dermatosparaxis (Bill de Saram). A dermatosparaxis-like condition has been seen in a closed herd of fallow deer, in which skin tears occur particularly around the neck in fawns. These tears heal but recur throughout the animal's life, A light-and electron-microscopic study is being undertaken.

NEW SOUTH WALES - prepared by Mark Carrigan

Equine Herpes viral abortion

A severe abortion storm occurred on a stud in central west New South Wales. Over a 4-6 week period 33 of the 55 mares on the stud aborted, 6 mares which had been pregnancy tested in foal early in 1986 are now empty, one foaled normally and 11 are still to foal. All abortions occurred in the last two months of pregnancy.

The gross pathology in aborted foals was typical of that reported for EHVI. There was excess straw coloured pleural fluid (2-3 litres) and the lungs were severely consolidated, purplish in colour and of a firm consistency. In some foals the airways contained fibrin casts which extended up the trachea to the level of the larynx. Livers were congested and grossly enlarged with rounding of their borders. Mottling of the hepatic parenchyma was apparent and on close examination scattered white pinpoint foci could be seen through the capsule in some but not all livers.

Histologically there was an acute interstitial pneumonia moderate interlobular oedema accompanied by a mononuclear cell infiltration. Throughout sections there was a fibrinous alveolar exudate and focal necrosis of alveolar epithelial cells. Bronchi contained casts of necrotic cells and fibrin. Numerous eosinophilic intranuclear inclusion bodies were present in bronchial epithelium. All livers examined had an acute hepatitis characterised by moderate periportal oedema accompanied by a mononuclear cell infiltration and in some livers multi focal areas of hepatocellular necrosis. Low numbers of hepatocytes in and around these foci contained eosinophilic intranuclear inclusion bodies. In the spleens and thymus there were multiple foci of lymphoid necrosis.

Equine herpes virus has been isolated from the tissues of the six foals submitted for virology.

Rhodococcus equi isolates

Rhodococcus equi was isolated from a goat and pig.

A Saanen (doe was presented for autopsy with a history of chronic weight loss. At necropsy there were multiple abscesses 4-5 mm in diameter throughout the liver and lungs. These abscesses contained thick yellowish pus from which R. equi was cultured in heavy pure growth. Due to the advanced state of post mortem decomposition, histopathology was not undertaken. Although R. equi has been isolated from a

range of animals this appears to be the first isolation from a goat reported in Australia (J. Woolcock pers. com.) and there is only one documented case in the literature (Whitford and Jones (1974) Southwestern Veterinarian 27 : 261).

R. equi was recovered from an abattoir sample of submandibular lymphadenitis in a pig.

Malignant Catarrhal Fever in deer

A deer farm has had continuous losses of Rusa deer in the last 4-5 years. This year 30 ex 50 Rusa deer have died. As in previous years the gross and histological findings have been in keeping with malignant catarrhal fever. Two deer have been autopsied from the recent mortalities. One had gross lesions in keeping with the enteric form of M.C.F. with ulceration and inflammation along the gastrointestinal tract. The other deer had changes in keeping with generalised M.C.F. with multiple pale foci throughout the renal cortex but no involvement of the gastrointestinal tract. Both deer had bilateral fibrinous hypopyon which is considered to be characteristic of M.C.F. in Rusa deer. Histologically there was a severe vasculitis in all tissues examined with necrosis of vessel walls accompanied by an intravascular and perivascular infiltration with mononuclear inflammatory cells.

Red Spot Disease Investigations - Dick Callinan and Graeme Fraser

Results of early work on the Noosa River in Queensland indicated that the ulcers of red spot disease developed following infection of the skin by Vibrio anguillarium. (Initial damage led to infection by other bacteria and fungi which exacerbated the condition). The Queensland workers believed that damage by skin parasites may predispose fish to infection.

Our aims were:

1. To identify a sequence of pathological changes leading to development of the ulcer.

2. To confirm the role of Vibrio anguillarium in initiation of early ulcers.

3. To investigate the occurrence of metazoen parasites on fish with early lesions.

Commercial fishermen's catches were examined each month between December 1984 and November 1985. During this period affected fish were found at all sampling sites extending down the river from fresh water at Mountain View to brackish Lake Wooloweyah. An outbreak of red spot disease occurred with peak occurrence of early disease in late March and ulcers in late May.

Five stages of the disease were characterised by gross and microscopic pathology. Stage 1 is characterised by haemorrhage and discolouration of epidermis with weakening and erosion of scales. Microscopically there is inflammatory cell infiltration in the superficial dermis and epidermis. Stage 2 is distinguished by the appearance of early ulcers. Stage 3 lesions have extensive loss of epidermis with penetration of the stratum compactum of the dermis and prominent invasion by fungi with characteristic granuloma formation. Stage 4 is the healing lesion. The epidermis is beginning to cover the margin and fungal granuloma is less prominent. Stage 5 is the healed lesion, recognised by altered scalation and pigmentation. At each collection up to 12 fish from each of stages 1, 2 and 3 together with 12 normal fish were obtained.

Scanning electron microscope studies of normal skin, Stage 1 and Stage 3 lesions showed resorption of scales and changes in the scale pocket. No bacteria were associated with these changes. However, fungal elements were found in the Stage 3 lesions. The nature of the changes were considered consistent with viral involvement.

Bacteria from a wide range of genera were recovered as dominant organisms from normal and diseased skin and intestine. There was no constant association between any of the organisms recovered and Stage 1 disease. A high proportion of Stage 2 and 3 lesions yielded either Aeromonas hydrophila or Aeromonas sobria as the dominant organisms. Vibrio anguillarium was rarely recovered from normal skin and Stage 1 lesions and from only approximately 20% of Stage 2 and 3 lesions.

Few metazoan parasites were recovered Monogenean and Prototransversotrema sp. were more commonly found on fish collected in brackish water. There was no obvious relationship between parasite numbers and occurrence of disease.

Further study has been made possible by the receipt of a Fishing Industry Research Trust Account (FIRTA) grant. During this second phase of the project, attempts will be made to recover viruses and to establish their role in initiation of the disease.

Miscellaneous

Pyrrolizidine Alkaloids - an 18% mortality rate amongst forty 20 month old Friesian heifers was attributed to the ingestion of Pyrrolizidine alkaloids. The cattle had been grazing an almost pure stand of Heliotropium europaeum and were supplementary fed with poor quality hay. Icterus and hepatic fibres were observed grossly. Microscopically, the characteristic lesions of megalocytosis, biliary hyperplasis, bile stasis and diffuse fibrosis were detected in the liver.

Embolic Nephritis - Corynebacterium pyogenes was found to be responsible for this relatively uncommon diagnosis causing isolated mortalities in heifers on two widely separated properties. Histologically, there were numerous septic fibrin thrombi in blood vessels throughout the kidneys and in one case, these had resulted in the formation of abscesses, while in the second, there was renal infarction and an associated acute ulcerative cystitis.

Bacillary Haemog1obinuria/Black Disease - a 4 year-old Hereford cow died suddenly on an irrigated property. Pathological examination found severe and diffuse icterus, haemorrhages throughout serosal surfaces and large areas of necrosis in the liver. Numerous clostridium novyi ("haemolyticum") were detected in flourescent antibody stained impression smears of the liver. Subsequent historical examination showed severe acute multifocal necrotising hepatitis.

Haemophilus somnus was recovered in dominant mixed growth from a Friesian cow and heifer with pustular vaginitis, that developed following service. This herd had an 8 month history of profuse vaginal discharges and infertility.

Cestrum parqui (green cestrum} toxicosis was diagnosed as the cause of death of one and sickness of 1 ex 46 four year old bullocks grazing this plant. Diffuse severe periacinar hepatic necrosis was present. Similar lesions were seen in a 12 month Jersey heifer that died on another property.

"Rubber Lips" - a small number of aged Merino wethers was noticed to develop swellings over the mandibles. From material submitted to the laboratory, lesions of multifocal pyogranulomatous glossitis and cellulitis yielded moderate pure growths of Actinobacillus lignieresii

NORTHERN TERRITORY - Prepared by L. Melville

Berrimah Agriculaural Laboratory (Lorna Melville)

Suspect Nitrate Poisoning in Greyhounds - Samples were received from two greyhounds which died suddenly with respiratory distress and terminal nervous excitement. The dog had been kenelled prior to death and while "poisoning" was suspected it was difficult to decide what and how it could have been administered.

Histologically there was severe generalised tissue congestion. In the kidney there was hypertrophy of some tubular epithelial cells but no intranuclear inclusion bodies could be found. At this stage a toxin was suspected, possibly black snake (the "King Brown" or Mulga Snake).

The owner subsequently rang to ask if "the turnips could have had anything to do with it". He had apparently cooked the dogs a "stew with lots of turnip tops because he didn't have any cabbage to put in". The stew had been fed a few hours prior to death. The remaining turnips were submitted for chemical analysis and the tops found to contain in excess of 10,000 ppm of nitrate. The submitting veterinarian confirmed the presence of large quantities of plant material in the stomach contents.

The mechanism of action in nitrate poisoning is described as the result of two actions of nitrite ion. The primary action is smooth muscle relaxation, particularly vascular smooth muscle, with resultant vasodilatlon and tissue congestion. The second action is the interaction with haemoglobin to form methaemoglobin.

Any comments regarding the kidney lesions would be appreciated.

Ulcerative Syndrome ("Red Spot") in Barramundi: An outbreak of severe ulcerative skin lesions has recently occurred in several coastal river systems of the N.T. The condition has been seen in several species of fish including barramundi, mullet, saratoga, sleepy cod, catfish, mangrove jack and long tom. It has been associated with high mortalities in many of these species.

The Australian Fish Health Reference Laboratory at Benalla has been mainly involved with investigations into this disease. They have isolated a virus which they believe to be the primary aetiological agent. Further work at AAHL has shown this agent is probably a rhabdovius. A rhabdovirus has been isolated from a similar severe ulcerative disease with high
mortalities in fish in South-East Asia.

The primary epidermal necrosis is followed by fungal invasion which produces a granulomatous dermatitis. More advanced lesions show a severe necrotising and granulomatous myositis.

The sudden appearance of this disease in the N.T. and its affect on both recreational and commercial fishing raises important questions concerning controls on the movement of live fish both nationally and internationally.

Psittacosis in Caged Birds: Two outbreaks of psittacosis have recently occurred in aviary birds.

The first involved finches, with 16 birds dying over a period of 3 days. The second involved rose11as with 4 deaths over 2 weeks

Lesions were confined mainly to the liver with multifocal necrosis and mononuclear inflammatory cells. Smears of both liver and spleen were positive for Chlamydia on immunofluorescence.

NEWS FROM VICTORIA - Prepared by Sue Friend

University of Melbourne

A Suspected Outbreak of Leptospirosis in Greyhounds (J. Spillman)

In early October there were reports of several young adult greyhounds not in work becoming extremely icteric acutely. Most of the dogs were maintained together whilst two dogs belonged to neighbouring farms. All dogs were vaccinated against Distemper, Hepatitis and Parvovirus. They were treated by the

referring veterinarian with intravenous fluids, antibiotics and supportive care. One dog, a 10 month old male in good condition became progressively worse and was euthanised two days later.

Significant clinical pathology included:

- red cell parameters - within normal limits

- white cell parameters- stress leukogram, occasional toxic change

Bilirubin	T - 195 umol/L
	U - 24 "
	C - 171 "
protein	- 63 gm/L
urea	- 30.7 mmol/L
creatinine	- 0.59 mmol/L
ALT	- 487 iu/L
AST	- 300 iu/L
SAP	- 552 iu/L
CPK	- 39,000 iu/L
LDH	- 268 iu/L

The gross finding consisted primarily of extreme jaundice, oedema of the gastric wall and multiple ecchymotic haemorrhages throughout all tissues and on serosal surfaces.

Histologically, there was extensive haemorrhage and oedema through all tissues examined. There was focal severe degeneration of skeletal muscle. Hepatocytes were acutely swollen and were leached of cytoplasm. Apoptosis was widespread throughout the liver. There were large areas of myofibrillar degeneration within the heart. Within the kidneys there was a severe acute nephrosis with formation of red cell and myoglobin casts. A more chronic lymphocytic, plasmacytic infiltration was present throughout the interstitium. The changes in skeletal muscle were thought to be consistent with Zenkers degeneration.

A tentative diagnosis of Leptospirosis caused by Leptospira icterohaemorrhagiae was made, but Warthin-Starry silver staining on kidney and liver was not conclusive. The degree of autolysis made this difficult, however. Serological confirmation in other dogs on the property is underway.

Presumed Myasthenia Gravis in an Old English sheepdog with a Thymoma - C. Miller

In early September of this year, a 4 year old male castrated Old English sheepdog was presented to the V.C.C. with a 4 week history of vomiting and regurgitation of undigested food. During the last few days prior to presentation, a progressive generalised muscle weakness was also apparent. Megaoesophagus and poor swallowing function was confirmed by a barium swallow. X-rays also revealed the presence of aspiration pneumonia. The dog was weak in all four limbs, to the point of recumbency. There was no detectable response to a Tensilon test. Muscle biopsies were negative. Due to deteriorating status, the dog was euthanased.

On post-mortem examination, there were no detectable muscle abnormalities. The oesophagus was flaccid, but not appreciably dilated. There was a moderate focal, cranioventral bronchopneumonia (aspiration). An approximately 4 x 4 x 5 cm, cream-coloured, soft nodular mass was present in the cranial mediastinum.

Histologically, there were occasional lytic myofibers and a few widely scattered perivascular lymphocytic or histiocytic infiltrates in the muscles examined. No neural lesions were detected in peripheral nerves or spinal cord. The mediastinal mass was confirmed as a thymoma, with spindle-shaped epithelial

components approximately equal in proportions to small lymphocytes. Evidence of either metastasis or vascular invasions by the thymoma was found.

Failure to find other lesions in the muscles and nervous tissue, and confirmation of the presence of a thymoma, make myasthenia gravis the most likely cause of this dog's neuromuscular disorder. The clinical failure to respond to Tensilon is uncommon with this disorder, but has been recognised in other cases.

References: Aronsohn, M. Canine Thymoma. Vet. Clinics of North America: Small Animal Practice, Vol. 15, No. 4, July 1985.

Australian Animal health Laboratory - Peter Hooper

The CSIRO Australian Animal Health Laboratory continues to develop its functions. Research has been initiated by staff transferring from the CSIRO Animal Health Laboratory in Parkville. Much of the work which started at Parkville on endemic diseases such as Akabane, is now concluding and is being replaced by work on exotic diseases. There is a natural continuance of biochemical and virological investigations on bluetongue virus, as strains of this virus exist in Australia as well as more virulent strains overseas. A major project on Newcastle Disease will be starting soon and work has commenced on the use of poxviruses as vectors for vaccines.

An interesting result of work on gene sequencing of bluetongue has been the evidence of the separation of bluetongue virus into geographic strains independent of their serological classifications. Hence, an Australian Type 1 although serologically related to the African Type 1, was more closely related by gene sequences to other different Australian bluetongue virus serotypes than the African Type 1. Information like this has an obvious inference in relation to epidemiology and the tracing of origins of disease.

On the diagnostic side, AAHL has been developing its capacity to diagnose the main exotic diseases. It has also been preparing inactivated reagents for other laboratories. Some of these diagnostic tests await practical usage. However, this has not been the case with foot and mouth disease. AAHL has developed a combined AAHL/Thailand government project with financial support from ACIAR. In this project supervised by Tony Forman, AAHL scientists will be utilising AAHL diagnostic capacity for FMD, notably its ELISA test, at the Thai government laboratory at Lampang in northern Thailand. Many of you will know that Harvey Westbury is there now.

AAHL has had responsibility for rabies diagnosis for over 6 months now. Readers of this report who work in State Departmental Laboratories will know about the AAHL transport units for rabies suspect brains kept at their laboratory.

Training courses for veterinary offices are scheduled to start in 1987. The time of commencement will depend on Commonwealth Government approval of importation of some of the exotic disease agents needed. In the meantime, we have been working with the agents that we have. So far, we have reproduced the following, in some form or other; Aujeszky's disease, swine fever, Newcastle disease, avian influenza and pleuropneumonia. When they arise, slides of characteristic lesions will be available for distribution to other laboratories if they so desire. We will also be collecting fixed material from other sources, so after a time, we should be a good reference source for slides of exotic diseases.

Probably the 3 most interesting diseases seen currently are outlined hereunder.

Histopathology of Avian Influenza

It is easy to understand why there has been less emphasis on histopathology for the diagnosis of avian influenza. The disease in our hands varies considerably with each strain. We have made some comparison

of the highly pathogenic 1985 Victorian H7N7 with some less pathogenic H4N4 and H6N6 A1 strains isolated from wild birds in Australia. As expected, the H7N7 was far more lethal, causing high mortalities

within 3 days of inoculation, while the other 2 strains were still pathogenic, but only after longer inoculation periods (7-8 days) and in much fewer birds. The pathology of the H7N7 disease was characterised mostly by marked necrosis of the bursa of Fabricius, the pancreas, subepithelial cells of the intestines and as foci with glial cells in the brains. This was markedly different to the areas affected in the diseases caused by the H4N4 and H6N6 which were mostly in the kidneys and spleens. These, in turn, differ to the patterns described by Helen Acland with the severe USA H5N2 strain. Presumably, in all the A1 diseases, the underlying pathogenesis was similar i.e. response to vascular disease. However, it was interesting to see the characteristic strain variations.

Aujeszky's Disease

The virus used was that isolated in New Zealand. It was nonpathogenic to weaner pigs but produced severe fatal meningoencephalitis in one week old piglets within days of intranasal inoculation. It seemed to be entirely neurotrophic. There were only minor changes in non-neural tissues. There was neuritis in nerves adjacent to the tonsil and occasionally the nasal mucosa, and there was a corresponding trigeminal ganglioneuritis. Neural spread was therefore likely. From a pathologist's point of view, there were some interesting areas of predilection of acute necrosis (as opposed to inflammation). Pyriform lobes were particularly affected by direct action of the virus (seen by EM in large numbers in those areas) and cerebellums were affected by ischaemic necrosis.

Personnel

Harvey Westbury of AAHL (ex Attwood, Victoria) is now in Thailand on the FMD project. Laurie Gleeson (ex VRI, Parkville) is at AAHL, Geelong but will eventually also be in Thailand.

RVL –Bendigo

Bovine Malignant Catarrh (Rod Badman)
A 10-monlh-old Charolais X heifer was presented with mild respiratory distress, visibly enlarged prescapular and parotid lymph nodes and a temperature of 41°C. Death followed 48 hours after the clinical examination. The histopathological changes of fibrinoid degeneration of arterial walls and lymphoid necrosis in lymph nodes were considered pathognomonic for BMC. The vessel changes were also present in the lung.

Cases of BMC are not commonly seen at RVL Bendigo, When it docs occur the usual accompanying history is one of a nervous syndrome. Lymphadenopathy is not a common feature of our BMC cases.

Nephrosis in goats (Rod Badman)

A Rochester property running 300 Angora goats experienced problems over several weeks which both private practitioners and Departmental officers investigated.

Clinical signs included abortion, scouring, depression, subnormal temperature and recumbency.

Clinical pathology on one doe revealed depressed serum calcium (0.9 mmol/litre) and a BUN of 34.0mmol/L. Clinical pathology samples indicated elevated BUNs in several other goats.

Pathological changes in several goats included moderate worm burdens, glomerulitis, severe nephrosis, protein cast formation and mineralisation of the medulla. The unifying feature of the cases appeared to be the renal lesion and as yet the cause has not been present.

Plant poisons such as oxalate were not considered likely causes as there was no evidence of crystals in the kidneys nor were oxalate containing plants present.

The goals were vaccinated for enterotoxaemia 10 months earlier and further deaths due to kidney failure have not occurred since vaccination for enterotoxaemia in early October.

The response of goats to clostridial vaccination is said to be poorer than for sheep and cattle and for that reason multiple clostridial vaccines are not recommended for goats. We have found, on a search of our records, a link between clostridial enteritis and nephrosis in goats. We would like to hear from anyone with similar experiences in goats.

Osteochondritis Dissecans (Les Sims)

A young boar arrived, footsore on a properly, but responded to foot bathing and penicillin. The boar was used successfully for several months but at nine months of age, suddenly became lame (in the right shoulder). The boar was destroyed. Post mortem lesions were those of severe osteochondritis dissecans (OCD) with secondary osteoarthrosis. Lesions were present in a range of joints, including both shoulders, tarsal joints and elbows, but were most severe in the right shoulder. The glenoid cavity appeared shallow, but the significance of this was not determined

Recent studies into the underlying pathology of OCD and other causes of severe lameness in pigs including epiphyscolysis and apophyscolysis (where the tuber ischii are separated from the pelvis) have revealed a common pathogenic pathway. All these conditions appear to be associated with dyschondroplasia in which there is a defect in the physeal or epiphyscal cartilage. The cause of the dyschondroplasia, however, is still to be determined.

RVL. Bairnsdale

Mortalities in Goats associated with Anthrax Vaccination. (Len Stevens)

128 feral goals were vaccinated with Arthur Webster's anthrax vaccine (Stern strain Bacillus anthracis prior to shipment to Dubai in the Persian Gulf.

Animals received one sheep dose (1ml) of the vaccine subcutaneously behind the shoulder. Seven days later twelve were lame and two dead. By twelve days post inoculation approximately 50% were lame and further two dead.

Affected animals had severe extensive swelling around the brisket, for leg and shoulder. They were depressed, listless and lethargic and had temperatures of 39-40°C. The smaller animals tended to be those most severely affected. Fluid varying from straw or blood-stained oedema fluid to milky pus could be aspirated from the vaccination site.

Aspirates and tissues sent to the laboratory at day seven yielded a mixed growth of abscess flora and non-encapsulated B. anthracis. By day twelve all fluid samples contained typical abscess flora only (Actinomyces pyogenes, Peptostreptococcus indolic us, microaerophilic coccus, Fusobacterium necrophorum and Bacteroides sp.)

The B. anthracis isolates were sent to Arthur Webster who confirmed that they were of the vaccine strain. However, it was expected that B. anthracis should have been eliminated from the tissues much more rapidly than was the case, which raised the possibility that a combination of stress and excess dosage in the

smaller animals may have contributed to the problem. The mixed abscess flora is normally found in the G.I. tract and on mucosal surfaces, and may have been introduced with the multiple use needles used or by the animals licking the injection site.

ANTHRAX DIAGNOSIS

A fluorescent antibody test for anthrax has been developed by RVL. Bairnsdale. Its greatest potential use is in the examination of blood smears containing many contaminating bacteria. To further evaluate the test, some smears from naturally occurring anthrax deaths are needed. As summer is approaching anthrax may soon make an appearance. If you can help, please contact Len Stephens at Bairnsdale. Fixation in acetone for 10 minutes will kill B. anthracis spores, enabling slides to be sent by post.

OVINE CAMPYLOBACTER ABORTIONS

Campylobacter sp. has been identified as the cause of multiple abortions and stillbirths on several South Gippsland properties over the past two months. Abortions have occurred in the last two months of gestation and the organism has been isolated from both fresh and mummified foetuses, the most consistent lesion is severe, necrotising placentitis, with vasculitis. Focal hepatic necrosis is seen occasionally.

A feature common to all outbreaks is the recent introduction by the farmer of the 'controlled grazing' procedure, whereby ewes are confined on small areas of pasture at high stocking rates. Campylobacter abortions have also limited the success of controlled grazing in New Zealand and Tasmania. Infection is believed to be spread by ingestion of aborted material.

There is no vaccine available for prevention of ovine Campylobacter abortion in Australia.

The Campylobacter species responsible for ovine abortion is generally considered to be C. fetus fetus (previously C. fetus intestinalis); however, isolates from the South Gippsland outbreaks have differed biochemically from C. fetus fetus isolates of bovine origin.

TRANSMISSION OF FOOTROT BETWEEN GOATS AND SHEEP

As a result of enquiries to the laboratory as to whether goats infected with virulent Bacteroides nodosus could transmit the disease to sheep, we conducted a small trial. Four goats were run in a small paddock with sheep affected with a known virulent strain of foot rot. The goats became infected after several weeks and the sheep were removed. Several weeks later uninfected sheep were introduced into the goat paddock and these sheep became affected with virulent fool rot after further several weeks. The seregroup of B. nodosus isolated from these sheep was the same as the original infection. Virulence of foot rot did not appear to change after passaging through goats. When goats are introduced to sheep properties precautions should be taken to ensure that foot rot is not being introduced as well.

AVOMEC OVERDOSAGE IN CALVES

We have investigated two instances of calf mortality following "Avomec" treatment. In the first outbreak 40 mixed sexes, three to four month old Hereford calves were injected with 3ml "Avomec" and 5ml 5:1 vaccine into the rump. Approximately half of the calves developed neurological symptoms within 36 hours of injection. One calf was found dead, a second was unable to rise and died subsequently, six were ataxic and "dopey", falling over intermittently and lying quietly (exactly the same as Ray Webb's video shown on "Countrywide* recently). Approximately 12 appeared tranquilised and did not move away when approached. Affected calves look between 2 and 6 days to recover. One 92kg heifer calf was necropsied. Findings were limited to pulmonary oedema.

In the second outbreak 19, three to seven week old Jersey calves were electrically debudded and injected with 1ml "Avomec" and 5m 5:1 vaccine subcutaneously. Approximately 20 hours later all calves were

drowsy; 28 hours post-injection one calf was found dead and another recumbent (subsequently died). All other calves were ataxic. Some leaned against fences, other walked with their head in the air. Apparent colic with kicking at the belly, scouring and dehydration were also noted. Symptoms disappeared after

approximately 4 days. One 34 kg. calf was necropsied. Lesions were limited to pulmonary congestion and oedema.

In both the above cases, calves were given 1-3 times the recommended dose.

TYZZER'S DISEASE IN A WOMBAT

We have recently seen an interesting case of Tyzzer's disease in a wombat. Five animals were kept within a confined area in a wildlife park. A previously healthy wombat suddenly began convulsing and died over 60 minutes.

On post mortem examination, excess yellow peritoneal fluid was seen. The liver was greatly enlarged with pin point foci of necrosis and haemorrhages throughout. Histology showed diffuse, severe, acute hepatic necrosis. The Warthin-Starry stain revealed masses of long slender organisms resembling Bacillus piliformis in the cytoplasm of the hepatocytes. There was no growth on aerobic cultures of liver. A second wombat was listless, had moist lung sounds but recovered without treatment on the following day.

Tyzzer's disease in well known in laboratory rodents particularly when subjected to stress. The disease is frequently enzootic and may present subclinically. It has also been observed in foals, dogs and cats often in association with some form of immunologic inadequacy.

RVL - Hamilton

"RED-FOOT" IN LAMBS (Cor Lenghaus)

"Redfoot" is a colloquialism used to describe a condition in young lambs in which the hooves from one or more digits fall off, leaving red-raw corium exposed. The disease had been seen sporadically over many years on one properly of outbred Corriedale sheep in the Hamilton area but had not been investigated in detail

Three lambs, approximately 3 weeks old, were submitted from the above property to the RVL. The lambs were well grown but reluctant to stand or move because of complete sloughing of most hooves, and the imminent loss of the remainder. Hooves were lost by a progressive separation commencing at the coronary band. Of added interest and some immediate concern, were thin blood or fluid-filled blisters on the inner surfaces of the pinnae, and large epithelial defects on the dental pad, along the gum margin of the incisors, the dorsum of the tongue and the appositional surface of the hard palate. The epithelial defects had ragged edges with tags of necrotic epithelium attached. These lesions were interpreted as ruptured vesicles. There were no other significant gross post mortem findings.

Histological lesions were essentially restricted to the grossly affected sites, although there was lymphoid degeneration or early regeneration in the thymus, Peyer's Patches, selected lymph nodes and spleen.

In the foot there was complete necrosis of dermal papillary projections into the keratinised epithelium of the hoof. There was extensive fibrovascular proliferation in the superficial connective tissue of the denuded third phalanx with haemorrhage, proteinaceous exudation and a heavy leucocytic infiltration, particularly of neutrophils.

Less advanced lesions were seen in the pinnae and oral cavity. The earliest inflammatory changes involved small foci of necrosis with some leucocytes, mainly neutrophils, in the connective tissue parallel to and immediately in contact with the basal epithelium. Fluid and leucocytes then accumulated, and as

necrotic foci coalesced, a line of cleavage was established between the epithelium and its substratum. In some sections there was apparently only physical separation of the epithelium from connective tissue at the dermal-epithelial junction, without inflammation or necrosis. Further separation caused coagulation-type

necrosis of the whole epithelium, which was then either sloughed or retained as a leucocyte infiltrated eschar.

There were several microscopic foci of epithelial separation found in the rumen. No abnormalities were found in grossly normal woolled skin.

The above is similar to "Red-foot" reported by McTaggart et al (1974) in Scottish Blackface sheep, although the gross skin defects and ocular lesions they described were not seen in our cases.

A (non toxic) virus has been isolated from affected lamb tissues and investigations are proceeding.

Reference

McTaggart. H.S., Ritchie, J.S.D. and Copland, A.N. (1974) Vet. Rec. 94:153.

NEPHROSIS AND DIARRHOEA IN YOUNG SHEEP

It has been a particularly bad year for diarrhoea in sheep, particularly in this year's lamb crop. While nematodiasis has been a major worry, the problem has often been compounded by bacterial infections (especially Campylobacter sp., Yersinia sp.) and coccidiosis. Very lush green feed may have played a part in these disease outbreaks.

Many farmers, working on the assumption that, "Diarrhoea-Worms", drenched affected mobs. Where there was no immediate improvement, sheep were treated again, sometimes with a double dose of drench. Oral sulphonamides and tetracyclines were also used sporadically in an effort to stop the fluid, dark brown-green diarrhoea.

Within 1-2 weeks of drenching, a number of the smallest, most diarrhoeic sheep were presented dead or moribund for post mortem examination. These animals died of renal failure. Blood or anterior chamber fluid from the eyes, had markedly elevated urea levels (30 > l00mmol/L; normal < 7mmol/L.) Kidneys appeared slightly swollen, and had a pale-tan cortex with an almost translucent white medulla. The tissue bulged slightly on cut surface, as though under increased internal pressure.

Histologically there was a generalised nephrosis with either destruction of existing tubular epithelium, or a very attenuated epithelium present, suggesting early epithelial regeneration. Mitotic figures were common in epithelial cells where regeneration was proceeding. There was sporadic hepatocellular death and a non-specific enteritis, the latter interpreted as the sequel to nematodiasis or other infections.

The above disease is similar to that reported in New Zealand by Jopp and Orr (1980) in which an enteropathy occurred in cases of "Winter Scours" of young sheep. Generally although not invariably, there was history of recent anthelmintic treatment.

The very fluid diarrhoea would rapidly lead to significant dehydration and electrolyte imbalance in affected lambs. This would be exacerbated if sheep were kept yarded for any length of time before or after drenching. Most broad spectrum anthelmintics presently used are at least partly absorbed from the gut, metabolised in the liver and excreted through the kidneys (Arundel 1985). It is not known whether drenching of debilitated lambs which had a failing circulation could alter the rate of metabolism or excretion of chemicals in the drenches, and whether this contributed to the spate of cases of nephrosis seen in July and August. In some flocks "double-dosing" effectively meant a 4-fold increase in drench to small lambs, in a body-weight basis.

Antimicrobials such as sulphonamides or tetracyclines when given orally are also absorbed from the gut and excreted through the kidneys. They cause renal tubular damage and renal failure if water is withheld from sheep after treatment.

In summary, while we are very familiar with cases of severe diarrhoea in sheep, due to a legion of causes, we have not before observed the significant amount of kidney damage associated with diarrhoea in flocks this year.

References:

Jopp, A. and Orr, M.B. (1910}. N.Z. vet. J. 28:195.

Arundal. J.H. (1985). "Veterinary Anthelmintics". Post Grad. Foundt'n, Vet. Sci. Review No. 26.

JOB LINE

UNIVERSITY OF QUEENSLAND

PhD Research: Veterinary Toxicology/Pathology

A post-graduate research studentship is available now for study of a naturally occurring hepatotoxicity of dogs. The appointee will, under supervision, experimentally define the role of suspected toxins in the disease, and will be expected to enrol for a Ph.D. degree.

Post-graduate training in veterinary pathology to the level of MACVSc is also available, and may be achieved during the project.

Qualifications: A degree in Veterinary Science registerable in Queensland is essential. Some post-graduate clinical experience would be an advantage.

Remuneration: Commonwealth Post-graduate Research Scholarship ($8126, may be tax-exempt on application). Some part-time tutorial work may also be available.

For further details, contact: Dr. W.R. Kelly, Dept. Veterinary Pathology & Public Health, University of Queensland, St. Lucia, Q. 4067 (Ph. 07 377 2565).

NORTH CAROLINA STATE UNIVERSITY - Instructor in Anatomical Pathology

Visiting Instructor - Anatomical Pathology, Department of Microbiology, Pathology and Parasitology, School of Veterinary Medicine. North Carolina State University has an opening for a visiting instructor in Anatomical Pathology. This is a non-tenure track position with an annual appointment. Candidates should possess a D.V.M. or equivalent degree and have completed formal training (residency or graduate program) in anatomical pathology. Candidates should have partially or completely met the eligibility requirements for certification of the American College of Veterinary Pathologists. This position is intended for an individual wishing time to prepare for board certification without having the full responsibility of an academic position. Responsibilities will include assistance with supervision of anatomical pathology residents and participation in the necropsy and surgical pathology service program of the School of Veterinary Medicine. Time and support needed for preparing for board certification will be provided. Salary range $21,000 to $26,000 per year. Starting date, July 1, 1987. Applicants should send letter of application, curriculum vitae and names of 3 references to Dr. Talmage T. Brown, Jr., Department

of Microbiology, Pathology and Parasitology, School of Veterinary Medicine, North Carolina State University, 4700, Hillsborough Street, Raleigh, NC 27606, (919) 829-4258.

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PRIVATE VETERINARY DIAGNOSTIC LABORATORY BRISBANE - Veterinary Pathologist

Central Veterinary Diagnostics., a private veterinary diagnostic laboratory in Brisbane is seeking applications for a position as a general veterinary diagnostic pathologist. Candidates should have a BVSc or equivalent, post graduate university training in veterinary pathology or extensive government experience in diagnostic veterinary pathology, and a MACVSc or higher qualification.

The laboratory is run by an experienced board certified veterinary pathologist and provides a wide range of diagnostic veterinary pathology services such as gross and histopathology, haematology, biochemistry, microbiology, and serology. The successful candidate would be expected to participate in all of the above activities and to help in the development of new diagnostic tests.

The salary is from $28,000 (depending on experience) and the anticipated starting date is immediate. The closing date for applications is December 1, 1986.

Send application including curriculum vitae, statement of professional goals, and the names of 3 references to -

Dr. Richard Miller BVSc, PhD, MACVSc, ACVP
Central Veterinary Diagnostics
P.O. Box 119
Wooloongabba Qld. 4102

For further information please telephone 07 3918500.

WASHINGTON STATE UNIVERSITY - Ph. D. Program

Graduate Training Position: The Laboratory of Comparative Haemostasis and Thrombosis, Department of Veterinary Comparative Anatomy, Pharmacology and Physiology, School of Veterinary Medicine, Washington State University is accepting applications for a 3-4 year program leading to a Ph.D. degree, starting immediately. Applicants must possess a DVM degree, with a minimum of one year post-DVM training preferred. The applicant will be involved with a NIH funded grant studying the role of vWF in canine uremia. Beginning salary is $17,500 per year. Closing date for receipt of application material is December 1, 1986. Applications should include a curriculum vitae, university transcripts and 3 letters of reference. GRE scores are desirable. Send applications to Dr. Jane Wardrop or Dr. Ken Meyers, Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology, School of Veterinary Medicine, Washington State University, Pullman, WA 99164-6520.

Washington State University is an equal opportunity/AA employer.

NORTH CAROLINA STATE UNIVERSITY

Clinical Pathology Instructorship

The Department of Microbiology, Pathology and Parasitology at North Carolina State University, School of Veterinary Medicine has a position immediately available in clinical pathology appropriate for an individual who has completed formal training and seeks an additional year of experience in preparation for the clinical pathology board examination of the American College of Veterinary Pathologists. The position involves a half-time commitment to teaching and service work in the clinical laboratory with the remaining

time free for self improvement. Service work will involve interpretation of cytology and haemotology slides, general laboratory management, and consultation with clinicians and students. Teaching responsibility for a senior student laboratory course and sophomore lecture/laboratory course will be shared with the department's two other clinical pathologists.

Applicants should send a letter of interest and goals, curriculum vitae and three letters of reference to Dr. Jerry Stevens, Department of Microbiology, Pathology and Parasitology, North Carolina State University, School of Veterinary Medicine, Raleigh, NC 27606.

Application closing date - January 1, 1987 or until a suitable candidate is chosen.

North Carolina State University is an equal opportunity/affirmative employer.

Crest and Motto for A.S.V.P.

There have been only 2 entries submitted so far. The first from Dr. Geoff Mitchell, Regional Veterinary Laboratory, Benalla is of particularly high standard although showing evidence of plagiarism. He considers the blowflies are particularly appropriate to Australian conditions.

UNABLE TO INCLUDE DRAWINGS.

The second entry from Roger Kelly, University of Queensland is of a similar high standard. The motto which was composed with the assistance of John Whitehorne of their Classics and Ancient History Department, can be translated very freely as "A dead animal is not (necessarily) a dead loss!"

DIARY OF COMING EVENTS

27th January, 1987 - Written examination MACVSc.

16th - 17th February, 1987 - Oral/Practical examination MACVSc. (New Zealand)

19th - 20th February, 1987 - Oral/Practical examination MACVSc. (Sydney)

18th - 22nd May, 1987 - Post-Graduate Refresher Course in Gross Pathology, (University of Sydney)

23rd May, 1987 - Annual Conference, A.S.V.P., (University of Sydney)

16th - 21st August, 1987 - World Veterinary Congress, Montreal, Canada

24th - 26th August, 1987 - ANZAAS Congress, Townsville, "Science and Life in the Tropics". Contact the Hon. Organizing Secretary ANZAAS Conference, James Cook University, Townsville, QLD. 4811

1st September, 1987 - Close of applications to sit membership examinations, Australian College of Veterinary Scientists.

VET. PATH. REPORT PUBLICATION DATES

JULY, OCTOBER, JANUARY, APRIL.