THE VETERINARY PATHOLOGY REPORT

Australian Society for Veterinary Pathology
S.A. Department of Agriculture
Central Veterinary Laboratories,
G.P.O. Box 1671, Adelaide, S.A. 5001
08-228 7271

Registered by Australia Post Publication No. VBG 6333

EDITOR: Robin Giesecke

Number 21 July, 1988

PAGE CONTENTS

2 PRESIDENTS PAGE

3 MINUTES AGM 1988

7 REGISTRY NEWS

8 NORTH AMERICAN TRAINING PROGRAMS

9 OBITUARY - K. G. JOHNSTON

10 CLOSURE OF RVL ARMIDALE

STATE REPORTS

10 New South Wales
15 Victoria
18 Western Australia
21 Northern Territory

22 JOBLINE

22 CLOSING DATES FOR COPY

23 FORTHCOMING CONFERENCES

INSERTS

Guidelines for Contributors
ASVP Conference 1989

PRESIDENT'S PAGE - Peter Phillips

It is with great sadness that, we report the recent passing away of our colleague and mentor Ken "Curley" Johnston. Ken had suffered dreadfully over his last few months and those of us who knew him in health mixed our feelings of sorrow with some of relief that his suffering has ceased. I have written to Ken's widow Patricia, expressing condolences on your behalf, but I'm sure that many of you who were close to Ken professionally or in your student years may wish to do likewise individually. The address is 22 River Road, Camden, NSW. 2570. The ASVP has donated $250 to the K.G. Johnston Prize in Clinical Pathology.

This year's conference on May 14th and 15th was, I believe, a resounding success with Terry Rothwell, Phil Ladds and Gary Cross leading the way with great contributions on our theme of Pathology of the lympho-reticular system. Supporting papers and case studies were of a very high standard and it was gratifying to hear nothing but favourable comment. To those behind-the-scenes workers who laid the foundations of the conference's success, not the least of whom were the caterers, I offer my thanks.

Next year we would have like to hold the conference/AGM in Adelaide and I must confess to feeling very disappointed at a motion passed at the AGM to hold the 1989 AGM on the east coast, particularly as since the AGM, there have been numerous people encouraging us to hold it in Adelaide. At the risk of upsetting some members I would like to re-open the issue and ask you to mail back your opinion on the enclosed sheet.

The decision of the NSW Minister for Agriculture to close the Armidale Regional Veterinary Laboratory comes as a shock to most of us. We believe that a recent non-released review of the lab was overwhelmingly supportive of the lab's role making the Minister's decision even more puzzling. I have written a letter to the Minister calling for reversal of the decision.

MINUTES AGM 1988

Minutes of the 5th Annual General Meeting held in the
Veterinary School, University of Sydney
Saturday 14th May, 1988 at 3.30 pm

1. Present

P Phillips (President), V.L. Tham (Secretary) , R. Kelly, N. Sullivan, C, Lenghaus, R. Jones, D. Pritchard, T. Ross, K. Walker, J. Rothwell, T. Rothwell, C. Huxtable, J. Seaman, S. Love, P. Hooper, M. Forsyth, L. Melville, P. Harper, M. Latter, R. Foster, D. Williams, A. Philbey, P. Ladds, S. Hum, W. Hartley, A. Crowley, B. Vanselow, R. Sutton, F. Trueman, R. Graydon, I. Links.

2. Apologies

R. Giesecke, T. Utteridge, J. Glastonbury, R. Badman, R. Webb, L. Sims, I. Jerrett.

3. Minutes of the 4th A.G.M. held in Sydney, Saturday 23rd May, 1987 accepted as a true record (Ross/Lenghaus).

4. Business Arising from Minutes: None

5. President's Report

Moved that the report be accepted (Trueman/Ladds). Carried.

6. Treasurer's Report

- Moved that the A.S.V.P. donates %250.00 to the K.G. Johnston Clinical Pathology Prize (Phillips/Harper). Carried.
- Moved that the membership fee remains at $12.50 (Australian and overseas sea mail) and $17.50 (overseas airmail) for 1988/89 (Utteridge/Sutton). Carried.
- Moved that the statement of income and expenditure 1/5/87 to 30/4/88 be accepted (Huxtable/J. Rothwell). Carried.
- I. Links explained that the increased Conference expenses for 1986/87 were due largely to cost of inviting speakers and transport.

7. Membership Report (Secretary)

Total membership on 9/4/88 was 176 (= 141 Australian, 34 overseas, 1 unknown address).
Breakup of Australian members by State:-

New South Wales	41	Victoria	39
Queensland	23	West Australia	21
South Australia	8	Northern Territory	5
Tasmania	4		

Breakup of overseas members by country:-

New Zealand	3	Papua New Guinea	2
Fiji	1	Indonesia	2
Malaysia	4	France	2
United Kingdom	2	Canada	1
United States	17		

Overseas members = 19.3% of 176. Net increase in membership was 15 from 24/4/86 to 21/4/67 and 17 from 22/4/87 to 14/5/88. Up to date the address of C.J. Bishop, D. Clancy and J.D. Moore are unknown. Any member who knows where they are, were requested to contact the Secretary. Names and addresses of members listed in back of 1988 Conference Proceedings. Proposed to do likewise in 1989 Proceedings. Hope subsequent Committees will do likewise.

Student membership (Utteridge) was briefly discussed. R. Jones recommended that this be discussed further at the next AGM.

8. Election of Office Bearers

The following nominations received:

President:	P.H. Phillips
Secretary:	V.L. Tham
Treasurer:	T. Utteridge
Committee:	P.R. Giesecke
Committee:	W.G. de Saram.

There being no other nominations the above officers were declared elected unopposed.

9. General Correspondence

I. McCausland (first President of ASVP and currently Executive Director of AMLRDC) wrote to congratulate ASVP on opening of the National Registry of Domestic Animal Pathology. P. Phillips in his capacity as President was requested to write to AMLRDC requesting it to donate funds towards the Registry.

10. Membership Fee

Covered under Treasurer's Report.

11. Veterinary Pathology Report (VPR) - Format and State Representatives

- R. Giesecke (Editor) thanked members for their contributions and requested them to follow typing guidelines provided, not to FAX contributions and to restrict length to one A4 page.

- P. Phillips reported difficulty in obtaining sponsorship for offset printing of VPR and that therefore present format will be maintained for next year.

- Request by the Sydney University Post-Graduate Committee in Veterinary Science (PGCVSc) to place VPR on their database to generate information for Veterinary Practitioners

  After some quite lively discussion it was moved that the Director of PGCVSc contacts the authors prior to inclusion of their contributions in their database for generation of information for veterinary practitioners (Kelly/J. Rothwell). Carried.

- State representatives (non-elected) for 1988/89: J. Rothwe11 (NSW), S. Friend (Vic), F. Trueman (Qld.), R. Giesecke (SA), D. Pass {WA), L. Melville (NT), and J. Handlinger (Tas).

- Conference Proceedings

  P. Ladds suggested volume and member for these, and I. Links suggested request for allocation of ISSN number and circulation to State and Commonwealth and University libraries. P Phillips/V.L. Tham to investigate and report later. I. Links also stressed that papers in proceedings should be sufficiently descriptive to be able to "stand on their own".

12. Slide of the Month

  C. Huxtable was assured by the meeting that this can be maintained despite increase in membership. P. Ladds congratulated C. Huxtable on his efforts so far. B. Hartley requested that unwanted early slides be donated to the Registry of Pathology - to be notified in the next issue of the VPR.

13. National Registry of Domestic Animal Pathology (Tony Ross)

- T. Ross gave an introduction to the Registry and showed a video of it. He thanked other members of the Registry Management Committee for their efforts so far.

- B. Hartley talked briefly on the Registry which had been in operation for 2 months, and requested that good material be sent to the Registry.

- T. Ross outlined the Registry collection policy and called for feedback from the meeting. The general consensus of the meeting was that all domestic animal and poultry pathology (of endemic and exotic diseases) to be housed in the Registry.

- Pathology of laboratory animals, native and exotic animals and birds to be housed in the Zoo Animal Registry.

- Computerisation of Register (estimated cost $3000) – permits exchange with Zoo Animal Registry (Links, Ross). Executive to investigate allocation of funds.

- Registry activities include (i) classification and filing of cases on hand, (ii) creating index by spp., organs, pathological change and aetiology, (iii) deposition of valuable material for future use, (iv) second opinions, (v) self-study, (vi) one to one teaching with Registrar, (vii) holding seminars and training courses and (viii) preparation for exam for pathobiology chapter membership of the ACVSc.

- Material to be made available to examiners for MACVSc (Huxtable).

- Material to Registry should be accompanied by relevant history (Walker/Seaman).

- Seminar at Glenfield (similar to Werribee seminar) (Ross) - meeting supported this but suggested obtaining views of other members through medium of next VPR.

- Meeting supported the proposa1 to collaborate with Sydney University PGCVSc in running short courses/workshops early next year to be opened to both ASVP and non-ASVP members. Suggested topics being diagnostic techniques in sheep diseases, digestive tract pathology of cattle and sheep,

- Funding options

  (i) State Governments. (ii) private sponsors - T. Ross to write to them, (iii) annual donations - welcome but considered insufficient, (iv) users pay - slides and self-study fee, registrar's instruction fee, seminar/course fee, (v) membership levy and (vi) raffles. Endowment might be the answer (Walker).

- Members encouraged to use the Registry.

14. Australian College of Veterinary Scientists (Pathobiology Chapter)
Not discussed.

15. General Business

(1) Postgraduate Training in Pathology

R. Kelly - present shortfall in the provision of post-graduate training in veterinary pathology in Australia is largely due to lack of Government support for such training programmes in this country.

T. Ross - the Pathology Registry, following relocation to the Elizabeth Macarthur Agricultural Institute at Camden, could be used for post-graduate training but requires further funding. P. Ladds - specialist registration (including pathologist) becoming important. Number of fellows of ACVSc still low.

(2) AAVTR

(Phillips /Seaman) - AAVTR to discuss the incorporation of veterinary diagnosticians in their group at the forthcoming AVA Conference in Canberra, to compliment rather than to be against ASVP.

After some discussion the general consensus of the meeting was that AAVTR can proceed as planned.

16. Next Meeting and Annual Conference

Moved that these be held in the Eastern seaboard (Ross/Huxtable). Carried.

Theme: Liver pathology or exotic disease pathology. Watch for visiting gurus.

17. There being no further business the President declared the meeting closed at 5.40 p.m.

Vui-Ling Tham)
HONORARY SECRETARY

REGISTRY NEWS

The National Registry of Domestic Animal Pathology opened its doors in February this year. Dr. Bill Hartley was appointed as Registrar to addition to being Registrar of the Zoo Animal Registry. Bill divides his time between the Registries at Glenfield and Taronga Zoo. Anyone wishing to contact him during the next five months can refer to the outline below.

In the first four months of the Registry's existence over 700 top quality cases have been cross indexed by species, organ or tissue, pathological change and aetiological agent.

Many hundreds of kodachrome slides of both gross and histopathological cases have also been filed and are available for loan. A five head microscope and histological video gear are available for use at the Registry.

If you have kodachromes or histological slides of good case material please consider donating them to the Registry or allowing them to be copied. Common conditions such as the clostridial diseases are still not adequately covered in the Registry's collection.

The Registrar is available for individual or group training courses and second opinions at Glenfield or in your own state. Contact Bill Hartley for details.

Funding beyond February 1989 is being requested from each State via the Principal Laboratory Officers sub-committee of the Animal Health Committee, which meets in Alice Springs in July 1988. Please lobby your state delegate to support the Registry. Meanwhile, thank you to Murdoch University for a second year of financial support. It is hoped that donations, large and small, will be coming from other groups which support the Registry.

A.D. Ross
Chairperson
Registry Management Committee.

Registrar's Schedule

National Registry of Domestic Animal Pathology,
Regional Veterinary Laboratory,
Roy Watts Road, Glenfield. NSW 2167
Telephone: (02) 605 1511 Ext. 246
Fax: (02) 605 2282

Zoo Animal Registry,
Taronga Zoo,
PO Box 20, Mosman, NSW. 2088.
Telephone: (02) 969 2777 Ext.249
Fax: (02) 969 7515

July	4-8	Glenfield	September	5-9	Glenfield
	11-17	Glenfield		10-25	Taronga
	18-31	Taronga		26-30	Glenfield
August	1-5	Glenfield	October	3-7	Glenfield
	8-12	Glenfield		8-23	Taronga
	13-28	Taronga		24-28	Glenfield
	29-2 Sept.	Glenfield		31-4 Nov.	Glenfield
			November	5-20	Taronga
				21-2 Dec.	Glenfield

NORTH AMERICAN TRAINING PROGRAMS IN PATHOLOGY AND CLINICAL PATHOLOGY

Our North American correspondent. Dr. H.D. McGavin has sent the Society a booklet containing details of training programs available in North American Veterinary Schools and Colleges during 1988-89.

The booklet may be borrowed from Dr. Robin Giesecke, S.A. Department of Agriculture, G.P.O. Box 1671, Adelaide, 5001 (telephone 08 2173106). Copies are also available from the Registry of Comparative Pathology, Armed Forces Institute of Pathology, Washington, D.C. 20306-6000.

Dr. McGavin has also sent news of the following positions advertised in the States:

RESIDENCY IN COMPARATIVE PATHOLOGY.

The Johns Hopkins University School of Medicine announces an opening in its Comparative Pathology Training Program. Three year residency. Stipends range from $15,996 to $30,000 annually depending upon prior relevant experience. Two openings in January 1989. For further information contact Dr. Tracie E. Bunton, Department of Pathology, Johns Hopkins University School of Medicine, Baltimore, MD 21205.

POST-DOCTORAL TRAINING

The Department of Veterinary Pathology at Texas A & M University announces the availability of residency positions in Veterinary Pathology beginning on or after July 1, 1988. Training in diagnostic pathology to prepare for the ACVP board examination in anatomic pathology.

The duties assigned will be to provide assistance in the teaching of applied pathology to veterinary students while assigned to the necropsy laboratory of the Veterinary Teaching Hospital. Applicants must possess a DVM or equivalent degree from an AVMA-accredited school. Beginning stipend will be $16,000. Interested individuals should submit a curriculum vitae and a statement of goals and interests to Dr. K.R. Pierce, Department of Veterinary Pathology, Texas A & M University, College Station, Texas 77843, (phone 409-845-5120).

GRADUATE/RESIDENCY POSITION IN VETERINARY TOXICOLOGIC PATHOLOGY

The Department of Veterinary Pathology and the Animal Disease Diagnostic Laboratory at Purdue University are offering a residency/graduate training position in veterinary toxicological pathology available 1st May 1988. The trainee will be enrolled in the Graduate School and will pursue the Master's degree. A degree in veterinary medicine is required. Starting salary is $15,000 per year. Applications will be taken until the position is filled. Inquiries should be addressed to Dr. F.R. Robinson, Head, Veterinary Pathobiology School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907. Purdue University is an equal opportunity/affirmative action employer/educator.

OBITUARY

KENNETH GEORGE JOHNSTON

Kenneth George Johnston, a member of the Australian Society for Veterinary Pathology, died on June 2nd, 1988, after a long and difficult illness. Curly Johnston, as he was affectionately known to so many students and to his colleagues, was born in Lane Cove, Sydney, in 1928. He received his secondary education at Hurlstone Agricultural College and was influenced by the then headmaster (a brother to the veterinarian W.L. Hindmarsh) to study Veterinary Science.

On graduation, his plans to leave Sydney for a rural practice had to be abandoned because of his widowed mother's illness. Instead, on Bob Bain's advice, he applied for a vacant Teaching Fellowship in Veterinary Bacteriology, and was duly appointed to the position. Later, at the suggestion of Professor Roy Carne, who with Bob Bain were strong early influences, Curly studied for the Diploma of Bacteriology at the London School of Hygiene. The daunting costs of this year were partly offset by a grant of £1,000 arranged by Carne.

In due course. Curly, now armed with his Dip.Bact. (Lond.) returned to Sydney and was appointed Temporary Lecturer in Veterinary Bacteriology in 1957. About that time the Camden facilities were being developed and Professor Carne suggested that he would be the appropriate person to start the planned Clinical Pathology laboratory. He applied for this position, was appointed, and moved to Camden in 1959. From that time, until the end of 1987, when his illness made work no longer tolerable, Curly developed and ran the laboratory be had started, taking on from 1967 the additional duty of the lecture course in Veterinary Clinical Pathology II.

Curly Johnston is survived by, his wife Patricia and children Bruce and Georgina, to whom we extend our sympathy for their loss. Curly will be sadly missed by all his colleagues and by the many hundreds of students who have benefited from his knowledge, experience, patience and wisdom.

P.J.C.
T.L.W.R.

CLOSURE OF REGIONAL VETERINARY LABORATORY - ARMIDALE

NSW Agriculture & Fisheries announced its decision to close the Regional Veterinary Laboratory at Armidale on 21st June 1988. The new Government has reduced the budget of the Department by 2.5% or $2.8 million.

Seventeen of the positions from the Armidale laboratory will be deleted while 8 will be used to create new positions at neighbouring regional laboratories. The positions to be transferred include 3 Veterinary Research Officers, 3 Technical Officers, 1 typist and 1 assistant. They will be advertised on the open market and the former Armidale staff members will be "free" to apply.

People occupying deleted positions will be:

redeployed into other positions within the Department,
redeployed within the public sector,
offered early retirement,
offered a redundancy package.

The area formerly serviced by the RVL Armidale will be split between the laboratories at Wollongbar, Orange or Glenfield.

Other laboratories didn't escape unscathed. A Research Officer has been deleted from Orange and Glenfield has lost the Mastitis Section and 2 Veterinary Research Officers involved in Parasitology.

Be warned, this is a major attack on our veterinary laboratory service and it could happen to you. Bob Coverdale and his loyal staff would greatly appreciate any support, moral or otherwise, you may be able to offer.

News of Members

Rob Rahaley has left the security and peace of Benalla Regional Veterinary Laboratory for the challenge of establishing a private veterinary laboratory in Adelaide. The laboratory is a branch of Veterinary Pathology Services, formerly Central Veterinary Diagnostics, the Brisbane-based laboratory of Richard Miller and Geoff Mitchell. We understand that Chris Belford has also recently joined the Brisbane team.

Rob's address is C/- Veterinary Pathology Services, 119 Anzac Highway, Kurralta Park, S.A., 5037, telephone 08-371 1780.

STATE REPORTS

NEW SOUTH WALES - Jim Rothwell

REGIONAL VETERINARY LABORATORY, ARMIDALE

ARTICULAR BODIES IN CATTLE (Steven Hum)

During routine meat inspection an incised shoulder joint revealed numerous spherical foreign bodies in an apparently healthy animal. The foreign bodies were 3-10mm, yellow-white regular globules and despite their pathologic nature they aesthetically appeared very pleasing. The globules were resistant to considerable pressure and were difficult to cut because of the tough elastic capsule. Smears of the content revealed creamy amorphous material with crystalline bodies scattered throughout. No cells were seen and culture of the material produced no visible growth.

Histologically the globules contained a few crystals and pink amorphous material bordered by a thin layer of mononuclear cells and fibrous capsule. Many of the mononuclear cells were necrotic. The synovial membrane of the joint was thickened and infiltrated by macrophages, lymphocytes, plasma cells and low numbers of neutrophils. There were areas of polypoid growth and the surface was covered by amorphous proteinaceous material. The tendon of m. infraspinatus had some areas of caseous necrosis surrounded by fibrosis and there were multifocal areas of necrosis and mineralisation with a granulomatous inflammatory response. PAS, Gram and silver stain were unremarkable. A diagnosis of chronic tenosynovitis, arthritis with endogenous soft "joint mice" was made.

IS AKABANE VIRUS A TERATOGEN IN HORSES? (Barbara Vanselow)

A "dummy" foal was born without assistance. It walked aimlessly, appeared to be blind and had no sense of smell and would not suck. It died after one day. On post-mortem examination there was severe congestion of the lungs and thorax. Congenital abnormalities included patent ductus arteriosis, hydroencephaly with a thin cerebral cortex surrounding enlarged ventricles, and a patent urachus. Heart blood was positive for antibody against Akabane virus on a virus neutralisation test. The foal was not seen to suck and had no milk in its gastrointestinal tract.

In utero infection with Akabane virus is associated with congenital abnormalities in calves and lambs but as yet there is no definite relationship with congenital defects in foals.

CHRONIC COPPER POISONING IN A CAPTIVE HAIRY NOSED WOMBAT (LASTORHINUS) (Barbara Vance and Terry Baboza)

Chronic copper poisoning was diagnosed as the cause of acute intravascular haemolysis and death in a mature female hairy-nosed wombat. The wombat had been in captivity for over 1 year with a group of 7 hairy-nosed wombats and 2 common wombats. They were housed in concrete pens and fed a maintenance diet of pellets composed mainly of oaten straw and lucerne, supplemented with a pig-grower vitamin mineral premix. For 4 months prior to the death, the wombats had been fed an experimental diet low in nitrogen but with the same amount of vitamin/mineral supplement as in their maintenance diet. The wombat died a few days after being returned to the maintenance diet. No clinical illness was observed prior to death and all the other wombats appeared healthy.

On post-mortem examination the wombat had severe and generalised jaundice of the skin, conjunctivae, mucous membranes and internal organs, and had haemoglobinuria. The kidneys were dark brown and the liver had a lobulated pattern. Histologically, haemoglobin was present in the glomerular space and kidney tubules, with haemoglobin casts blocking straight collecting tubules. Numerous other straight collecting tubules were distended but apparently empty. There was centrilobular congestion of the liver and hepatocytes were enlarged. Their cytoplasm was granular and the nuclei were enlarged and variable in size. Brown staining material was present in bile canaliculi.

Copper levels were measured in liver samples from the dead jaundiced wombat and 2 wild hairy-nosed wombats. The affected wombat had a liver corner level approximately 87 times that of the 2 wild wombats. Copper levels were also measured in the feed samples and in pasture samples from the natural habitat of the hairy-nosed wombats (Blanchetown, S.A.). Both the maintenance and experimental diet contained 4 times the copper level found in the pasture.

As a consequence of the diagnosis of chronic copper poisoning, the vitamin/mineral supplement was changed from the pig-grower premix to a marsupial premix with a lower copper levels. After 1 year on this new diet 4 of the hairy-nosed wombats were humanely killed and liver copper levels were measured and found to be slightly lower than those in the 2 wild wombats

The high liver copper levels occurred following continued ingestion of copper over a long period. The pig-grower premix was an unsuitable supplement because of its high copper content. In the case of this wombat, the haemolytic crisis may have been precipitated by the recent change of diet.

*Dept. of Biochemistry & Nutrition, University of New England. Armidale

Table 1 – Liver Copper Levels

Wombat Identification		Liver Copper Levels (mol/kg Dry Weight
Dead toxic captive		10.3
Wild 1		0.21
Wild 2		0.21
Captive	) A	0.19
(after 1 year on	) C	0.18
Low copper diet	) E	0.17
	) G	0.22

Table 2 – Copper Levels in Feed

Diet	Copper Level (mol/kg Dry Weight
Maintenance diet with pig grower premix	0.???
????? ?????? diet with Pig grower premix	0.???
Maintenance diet with Marsupial premix	0.11
Pasture sample (Blanchetown S.A.)	0.14

?????? UNABLE TO READ EVEN WITH THE AID OF A MAGNIFYING GLASS.

REGIONAL VETERINARY LABORATORY – GLENFIELD

AN EXPENSIVE CASE OF TESTICULAR DEGENERATION (Tony Ross)

Semen from a 13 yr old Friesian bull of high genetic merit had been used for several years. However, when his semen was heavily used in seasonal calving areas for the first time, conception rates were erratic, costing the AI centre concerned a large amount of money, clinically the bull appeared normal apart from slightly flabby testes (scrotal circumference 36.5cm).

At post mortem there was a chronic active suppurative lesion in a submandibular lymph node yielding a profuse growth of Pasteuralla haemolytica Type A.

Bacterial, viral and mycoplasma cultures of the reproductive tract and major organs provided no other significant findings. Histopathology revealed testicular changes consisting of buckling and thickening of basement membranes of most seminiferous tubules associated with degeneration (1) of the late spermatogonia and early spermatocyte layers of the seminiferous epithelium.

Acute and chronic foci of infection in the lung, lymph nodes and spleen with pale infarcts in the kidneys suggested that waves of septicaemia/toxaemia had occurred over a considerable period of time.

The recurrent effects of toxaemia and/or hyperthermia had lead to intermittent bouts of testicular degeneration, had probably resulted from suboptimal semen and poor conception rates.

(1) Rao Veeramachaneni D.N. et al. Amer J. Vet Res 1987, 48:243.

REGIONAL VETERINARY LABORATORY WAGGA WAGGA (John Glastonbury).

CATTLE

Radiomimetic Syndrome

A spectacular mortality rate of approximately 25% occurred amongst 170, 3-year-old cattle on a feed-lot. Except for the source of urea, the ration consisting of clover hay, triticale, wheat, pollard, pea flower and urea had not been changed for the previous 8 weeks. Post-mortem findings strongly suggested severe depression of bone narrow leading to a haemorrhagic diathesis and marked neutropaenia. Many of the animals succumbed to terminal secondary bacterial infections. Trichothecene mycotoxicosis is one strong diagnostic possibility and Dr. Pitt from the CSIRO at Rydalmere has kindly undertaken to perform the appropriate analysis.

Epicarditis/abortion

Various samples were submitted from a foetus which had been aborted at 7.5 months of gestation. Serological and bacteriological examinations were negative. Histological examination of the heart revealed acute segmental fibrinoid necrotising vasculitis and a moderate infiltration of eosinophils into the epicardium. Mild non-suppurative cholangiolitis was also found. Infection with Sarcocystis sp. was suggested as one diagnostic possibility for this most unusual lesion.

SHEEP

Geeldikkop

Severe photosensitisation was observed in weaner sheep on 3 farms in the Western Riverina. Morbidity rates were 2.8 (1300), 9.0 (300) and 16.0% (200). Serums submitted from the farms contained elevated

levels of CT and AST. In each outbreak the sheep had access to Tribulus terrestris which had flourished following recent rain.

The degenerative hepatopathy in these cases was characterised by the presence of acicular clefts in the biliary tree, hepatocytes and perisinusoidal cells. Additional findings were severe bile stasis, swelling of hepatocytes and perisinusoidal cells and individual hepatocyte necrosis. Clefts attended by an apparent granulomatous response were also detected in the renal proximal convoluted tubules.

Campylobacteriosis

Of 460 3-year-old Merino ewes, 4.3% aborted during the last month of gestation. Pathological examination of aborted foetuses found excessive volumes of serous fluid in body cavities and multifocal areas of hepatic necrosis, <1.5cm in diameter. Campylobacter jejuni was recovered from the foetal stomach, liver and lung of these foetuses. Histological examination revealed multifocal acute coagulative hepatic necrosis together with the presence of intravascular fibrin thrombi.

Salmonellosis

A mob of recently purchased 9-month-old Merino weaners were treated with antibiotics in an endeavour to prevent the introduction of footrot onto the farm. However following the stress of yarding for this procedure 4.2% (430) became ill and subsequently 55.6% of the affected animals died. Heavy growths of Salmonella typimuriuim were recovered from the intestine and mesenteric lymph node of one animal submitted to the laboratory. "Typhoid nodules" in the liver, severe chronic enteritis, evidence of disseminated intravascular coagulopathy and diffuse necrotic ileitis were found histologically. The latter lesion was of particular interest bearing marked resemblance to regional ileitis of pigs.

PIGS

Streptococcus suis Type 9 Septicaemia

In a large intensive piggery 20 weaners died suddenly. Severe visceral congestion and ascites with strands of fibrin were found pathologically. Streptococcus suis Type 9 was recovered in heavy pure growth from the liver, spleen and cerebrospinal fluid of 2 animals. Subsequent histological examination found fibrinopurulent leptomeningitis and focal necrotising splenitis.

Salt Poisoning

Following a brief period of water deprivation, 0.7% of 1,500 4-month-old grower pigs developed neurological signs. Of the affected animals, 63.5% subsequently died and were found to have acute polioencephalomalacia of the cerebral cortex and eosinophilic meningoencephalitis, histologically.

POULTRY

Coccidiosis

Out of 350 7-week-old chickens there was a mortality rate of 22.9%. Post-mortem examination found an extremely thickened tunica mucosa in the mid to distal small intestine. Wet preparations of this mucosa revealed the presence of numerous oocysts with a morphology consistent with Eimeria maxima.

Necrotic enteritis

In a poorly managed unit, 3.5% of 400 3-week-old chickens died following brief periods of illthrift and diarrhoea. Extremely severe necrotic enteritis was observed grossly in the proximal 20cm of the small intestine. Anaerobic culture yielded a heavy growth of an organism provisionally identified as Clostridium

perfringens. Typical lesions of necrotic enteritis were found histologically with ghost-like villi being lined by a lawn of Gram positive rods and being separated from the underlying lamina propria by a mild neutrophil response.

VICTORIA- Sue Friend

REGIONAL VETERINARY LABORATORY - HAMILTON

MULTIPLE BIRTH DEFECTS IN INBRED POLL HEREFORDS (D. Williams)

A small Poll Hereford stud reported increasing numbers of deformed calves born 4-6 weeks premature, mainly from heifers in the mob, during 1984 and 1985. Ten affected calves were submitted to the laboratory during 1986, mostly born in autumn. Calves had apparently died in utero and were moderately autolysed when presented for autopsy.

Post mortem findings included foreshortening and arthrogryposis of limbs, scoliosis, deformed thorax and pelvis, internal hydrocephalus and cleft palate. Repeated attempts to demonstrate a viral aetiology (suckling mouse inoculation; tissue culture; serology) were unsuccessful. There was nothing in the grazing management to suggest an environmental teratogen. Examination of the breeding records showed a remarkable degree of inbreeding, including siblings and parent-offspring. The problem disappeared during 1987 following the purchase of a new bull in 1986.

Cows and heifers were mated to yet another new bull in 1987. So far in early 1988 we have had 2 affected calves presented for examination, about 10% of cows which have calved. Seemingly the latest sire was also closely related to the dams in the herd, unbeknown to the farmer.

ANTHELMINTIC PASTES IN HORSES (J. Webber)

Recently we were consulted by a practitioner about horses with ulcers and erosions in the mouth. The horses had been treated with a worm-and-bot paste the previous evening and confined in a pen overnight. Of 10 horses he examined, one had severe ulceration and erosion of the epithelium of the tongue, gums and palate. Another horse had similar, but less severe lesions and several others had blotchy red streaks on the oral epithelium. There was no source of caustic/toxic material in the pen.

Some horse-owners are well aware of potential, caustic side-effects of anthelmintic pastes in horses, especially those containing trichlorphon. Significantly, there was no suitable warning in the narrative on the dose-syringes used in this instance. Precautions that should be taken to minimize side-effects are:

* do not treat on an empty stomach
* horses should have free access to water
* the paste should be administered on the back of the tongue.

Potentially this was a case of exotic vesicular disease. Vesicular Stomatitis (VS) is the only naturally occurring vesicular disease of horses. It is caused by a rhabdovirus transmitted by arthropods, and affects horses, pigs and cattle. It causes erosions of the mouth epithelium and skin of the teats or feet, which are clinically indistinguishable from Foot and Mouth Disease. The rapid, world-wide transport of race horses, poses a real threat of trade disruptions particularly to Australia and New Zealand where vesicular diseases are absent.

POUR-ON PYRETHROID AND CONTACT DERMATITIS IN SHEEP (C. Lenghaus)

Three thousand sheep on one property were treated off-shears in early January with “Duracide” (Alphametrin, Smith Kline) a pour-on, synethic pyrethroid for lice control. The product was apparently used according to directions and conditions for use were good. In one mob of 800 mature Romney ewes,

approximately 10% developed backline skin lesions along the width and length of the Duracide application. The wool was matted and underlying skin easily peeled away from the body. Some sheep had extensive backline sloughing of skin. Sheep did not appear ill. Biopsy revealed a resolving epidermitis and superficial dermatitis with granulation and re-epithelialisation of damaged tissues. There was nothing to suggest an infectious cause.

DISSEMINATED DERMATOPHILOSIS (J. Webber)

Three 2.5 year old Merino wethers were presented for autopsy after 15, in a mob of 370, had died 10-14 days after shearing. The farmer described all sheep that had died as having "block blotches" of varying sizes on the skin.

One sheep was comatose, with 3 large areas of wool and epidermal skin loss 20-30cm diameter over the withers, left flank and rump. The underlying exposed dermis was dry and black in colour. Approximately 60% of the wool on the body was hard to the touch and the underlying skin was crusty and cracked. Wool and skin could be easily peeled off, leaving a raw bleeding dermis. The sheep appeared in considerable pain. The other 2 sheep had similar, but less severe lesions.

The sheep had been treated with a pour-on acaricide after being shorn. Later that day the sheep were rained on, so the farmer shedded the sheep overnight, fearing losses from exposure. It is hard to imagine a more ideal set of circumstances for Dermatophilus infection to become established (fresh wounds, humid environment and soft, wet skin).

Dermatophilus sp. was readily identified on smears and cultured in heavy pure growth from the lesions. The sheep had succumbed from a combination of severe endotoxaemia, starvation and dehydration.

CAPILLARIS INFECTION OF CALIFORNIAN QUAIL (D. Williams)

Three Californian quail died in a two week period after becoming "listless and fluffed up". At post mortem the epithelium of the oesophagus was roughened and there was a distinct diphtheritic membrane coating the crop and gizzard. Embedded in the necrotic debris were numerous Capillaria sp. parasites. These were only readily apparent in histological sections.

Both C. annulata and C. contorta can inhabit the upper alimentary tract of birds. C. annulata requires earthworms as an intermediate host; C. contorta has a direct life cycle with infection propagated by ingestion of embryonated eggs.

COCCIDIOSIS IN RABB1TS (C. Lenghaus)

A severely dehydrated 6 weeks old rabbit with mucoid, bloody diarrhoea was submitted for autopsy. It was the third in a litter of 6 to sicken and die in a period of 12 hours. The intestines were dilated and intestinal contents very watery. Very large numbers of Eimeria irresidua and E. piriformis oocysts were seen in intestinal scrapings and contents. Histologically there was extensive destruction of intestinal epithelium consistent with coccidiosis.

These Eimeria sp. are reported to cause severe enteritis. Generally we consider coccidiosis in rabbits as a liver disease, caused by E. stiadae infection of bile ducts. The above intestinal disease probably reflected poor management and hygiene.

ALGAL POISONING IN SHEEP AND CATTLE (C. Lenghaus)

The warm, drying weather this Summer, with lowering of water levels in dams and lakes, created ideal conditions for the proliferation of anaerobic bacteria in bottom mud, which in turn provided the necessary phosphorus, nitrogen and carbon dioxide levels in the water for rapid growth of photosynthesizing algae,

including toxic blue-green algae (Microcystis sp; Anabaena sp). While algal proliferation initially occurs on the bottom, intracytoplasmic gas vacuoles carry it to the surface, where prevailing winds may concentrate the algal bloom and deposit it at the water's edge. Toxicity of the bloom can quickly vary, but is generally at its peak during the rapid proliferation phase of algal growth, or when the bloom is disintegrating. The cyclopeptides which are the toxic principle are presumably fairly stable, and may settle as a thin "blanket" over water weeds and rushes in a drying swamp.

During late summer a spate of "sudden death" episodes occurred in sheep flocks, particularly north of Hamilton, from Ararat to Horsham. Histologically, affected sheep had extensive periacinar necrosis of the liver. In the absence of other known toxic factors these cases were provisionally diagnosed as algal poisoning. Rarely did the history indicate exposure to algal bloom, nor was a water sample submitted for examination and identification of algae.

A dead Friesian cow and a moribund Jersey cow were submitted for autopsy from a 160 cow dairy herd, which had been dried off 4 days previously before being turned, hungry, onto a paddock containing a small, drying swamp. Within 24 hours 4 cows were dead and the above 2 were found in lateral recumbency, with positional bloat.

They showed only a transient response to intravenous calcium and magnesium therapy before one died, in convulsions. At post mortem tissues were congested, with splash haemorrhages in the omentum and endocardium. Rumen and small intestinal contents appeared normal, but caecum and colonic contents were very dry and compacted. The liver was swollen, with pronounced rounded edges and a readily discernible lobular pattern. The gall bladder wall was oedematous and there was excess, clear yellow peritoneal fluid present. Biochemistry on the moribund cow indicated severe, acute liver disease, which was confirmed histologically. The clinical history and hepatotoxicity were again consistent with algal poisoning but as with many such cases, the toxic factor was not unequivocally identified.

TOXOPLASMOSIS IN GOATS (Cor Lenghaus)

A flock of 100 does were run as a group in a large paddock. Three abortions at about 100 day's gestation were noticed over a 2 week period, although more could easily have been missed. Histology of one aborted foetus revealed widespread focal necrosis and mineralization of many tissues, typical for Toxoplasmosis. Maternal serum had an indirect haemagglutination Litre of 1024, consistent with recent Toxoplasma gondii infection. These goats had been fed the residues from a haystack, which had presumably been contaminated with cat faeces.

Ultimately only about half of the 100 does produced live kids, highlighting again the severe reproductive loss which can occur due to toxoplasmosis - see Nurse and Lenghaus Aust. vet. J. 63(1) 27-28 (1986) for the report on another similar outbreak.

H. SOMNUS IN DAIRY CATTLE (Jonathan Webber)

The final report on an Australian Dairy Research Council funded project - "The Diagnosis and Control of Infertility in Dairy Cattle due to Haemophilus somnus Infection", has been submitted. This was a joint project between the RVL's at Hamilton, Bairnsdale and Benalla. Many Departmental field veterinarians and private practitioners also contributed to the project. The main findings were:

1. The clinical syndrome of post-mating vaginitis has been clearly characterized. The salient features are:

    1.1 The disease appears to be venereally transmitted. Outbreaks are invariably associated with natural service of cows or heifers by a bull. There is also circumstantial evidence that suggests the disease can be spread by direct mechanical means on the instruments/hands of veterinarians, A.I. technicians and farmers.

Therefore on properties where this disease is a problem, the use of artificial insemination instead of natural service is recommended as a prophylactic measure. This recommendation has been widely adopted on problem properties and been promoted by dairy veterinarians. As a result, the incidence of this disease has declined significantly.

1.2 Haemophilus somnus has a significant aetiological role in this syndrome; Ureaplasma sp. and Mycoplasma sp. probably to a lesser extent, have a significant role too. However, it would appear that these commensal organisms of the reproductive tract have a secondary, synergistic role, following an as yet unidentified primary pathogen (virus?).

From an academic view point, definitive identification of the primary pathogen would be an area for further research.

1.3 The pathology associated with the purulent vaginal discharge is a suppurative cervicitis and anterior vaginitis. Metritis associated with this syndrome occurs rarely and less than 25% of cows with purulent vaginal discharge have a metritis.

The development and use of guarded uterine swabs will enable veterinarians to make a more objective diagnosis of metritis. This will then enable selective intrauterine treatment of cows for confirmed metritis, instead of the routinely used ad hoc intrauterine treatment of all cows with a vaginal discharge. Cheaper and easier to administer douches are more appropriate for treating, cervicitis and vaginitis.

2. The effect of cervicitis on fertility appears to be less than originally anticipated. However, individual farms may experience very high return-to-service rates with resultant prolongation of calving to conception intervals.

3. Multiple serotypes of H. somnus exist. This, together with the unique DNA restriction endonuclease banding profiles of particular isolates, may be beneficial in diagnostic tests and epidemiological studies. If vaccination was warranted, the existence of multiple serotypes could make development of an effective vaccine difficult.

4. Ability of H. somnus to attach to vaginal epithelium is essential for pathogenicity. Further study of this phenomenon has excellent possibilities for discovery of ways to modify or prevent infection.

5. Australian isolates of H. somnus have been shown to be encephalitogenic under experimental conditions. Therefore the potential exists, given the right management conditions of intensive housing of cattle under confined feedlot conditions as seen in North America, for the occurrence of the disease "Infectious Thromboembolic Meningoencephalitis" in Australia.

6. On a more esoteric note, biochemical, enzymic, serologic and DNA characterization has clarified the taxonomic relationship of the Haemophilus somnus/Haemophilus agni/Histophilus ovis group of organisms. They could be regarded as biotypes of a single species.

WESTERN AUSTRALIA - David Pass

ANIMAL HEALTH LABORATORIES - SOUTH PERTH

RENAL FAILURE IN A PORCUPINE (J. Dickson)

A female porcupine (Hystrix galatea) was found dead in the Perth Zoo. No previous signs of illness were seen. Three males and two females were confined in a concrete floored pen. The last one born in the zoo was in 1978 and the first introduction was in 1950. As they were not individually identified, the age of this animal is uncertain.

Post mortem findings were hydrothorax and ascites, mild distension of the right ventricle of the heart and two white fibrotic kidneys thought to be about 2/3 of normal size. General cultures of lung, liver and spleen were negative.

Histopathology of the kidneys showed massive fibrous replacement with only occasional dilated tubules left, and in many of these, oxalate type crystals were present (pizzolotto stain positive).

The only other major change detected was in some blood vessels in the white matter of the cerebellum where there was medial mineralisation that did not appear to restrict the lumens.

The old world porcupines are rodents that on free range have a wide and varied diet of bark, roots, grass and Carrion. In the zoo they are fed bread, various vegetables, fruit and ungulate cubes. Nothing of known high oxalate content is fed.

Murdoch University

Mycobacteriosis in Rainbow Trout (Dave Pass and Ron Peet)

Significant losses due to infection with Mycobacteria have occurred in brood stock and younger fish in a trout hatchery and one trout farm in WA this year. Less significant losses occurred on three other properties. Losses occurred particularly over the late summer and early autumn months. This period was very hot and it is felt that warm (22°-24^{o}) water temperatures may be a factor in the development of the disease. Lesions occurred predominantly in the kidney although liver, spleen, skin and, microscopically, gut, were also involved. White, focal lesions seen grossly consisted of macrophages that contained acid-fast bacilli. The bacteria grow relatively easily on blood agar. Colonies appear in 7-8 days at room temperature. Isolates so far have been M. marinum.

Acute Encephalopathy in Persian Cats (Clive Huxtable)

Several cats in an establishment breeding short-haired Persians developed acute, severe, neurologic signs, with features suggestive of thiamine deficiency. Response to injected thiamine was partial and the animals remained unable to stand but were responsive and not blind. One young adult and one three month old kitten were euthanased and necropsied at Murdoch. There were brain stem lesions consistent with thiamine encephalopathy but, in addition, there was very extensive acute necrosis of cerebellar Purkinje cells. In our experience, the latter is not an expected feature of thiamine encephalopathy and was felt to be too severe to have resulted from the seizure. Any comments would be greatly appreciated.

ALBANY REGIONAL LABORATORY (Ruth Reuter)

BOVINE

Selenium Toxicity.

Thirty six Hereford cross calves ranging in age from two days to two weeks were drenched for scours with an electrolyte solution. At the same time they received 10ml of a selenium stock drench per os. Seven calves died within the next 48 hours, and the remainder were severely depressed. On post mortem of one calf there were extensive pulmonary and cardiac haemorrhages, large areas of haemorrhage and necrosis in the rumen, reticulum and omasum, and a blood-stained watery intestinal content. Biochemical analysis of the liver showed 20 ppm selenium. Questioning the owner revealed that the calves had been given 10ml of the concentrated stock solution instead of the recommended 1:10 dilution.

Spongiform Leucoencephalopathy.

Formalised brain tissue was received from a five day old Hereford cross heifer with a history of nystagmus, opisthotonos, muscular rigidity and inability to rise. There was no response to intravenous antibiotics and Finodyne, and the calf was euthanased. On histology a diffuse oedema of myelinated nerve fibres typical of Maple Syrup Urine Disease was found throughout the white matter. This was the first calf from the cow and no other cases had occurred in the herd as far as could be determined.

Reference.

Harper P.A.W., Healy P.J. and Dennis J.A. (1986) Maple Syrup Urine Disease as a cause of spongiform encephalopathy in calves. Vet. Rec. 119 : 62-65.

OVINE

Suspect Campylobacter enteritis in rams.

Faecal samples were submitted from a mob of merino stud rams which were scouring severely. The animals were bright and alert, eating normally, but passing excessive amounts of green watery fluid with little evidence of discomfort. Mobs of ewes and weaners on the same property were apparently unaffected. The problem had occurred at the same time the previous year. Direct smears of the faecal material showed very large number of Campylobacter-like organisms, however, there was no significant growth on culture. Treatment with sulphonamides produced complete recovery in 24-48 hours.

Pregnancy Toxaemia.

Recumbent, depressed ewes with a strong odour resembling acetone on the breath were submitted from several properties. Characteristic post-mortem finding of pale, swollen, friable liver and kidneys, pinkish discolouration of body fat stores, strong positive reaction for urinary ketones and large lambs in late stages of gestation supported a diagnosis of pregnancy toxaemia in these cases.

CANINE

Adrenocortical Atrophy.

A two year old female kelpie presented to a local clinic for apparent constipation improved with intravenous fluid therapy and antibiotics. Six days later it relapsed and, despite a temporary response to fluids, developed a coarse head tremor, vomiting, depression and died. On post-mortem the adrenal glands were firm, gritty and measured approximately 2mm x 5mm. Microscopic examination revealed complete replacement of the adrenal cortex by fibrous tissue.

MISCELLANEOUS

Enterotoxaemia in Rabbits.

Sporadic deaths in a group of 250 Angora rabbits resulted in the loss of 20 young breeding does over a 2 month period. Profuse diarrhoea and death within a matter of hours followed introduction of a shipment of lucerne pellets to the ration. The most striking finding on post-mortem was an enlarged, haemorrhagic caecum containing watery green fluid. Smears and culture of caecal contents yielded an organism closely resembling Clostridium spiroforme. Intraperitoneal injection of filtered supernatant from caecal contents caused illness and death in mice in 24 hours; however, feeding pellets from the shipment to laboratory rabbits caused no signs of illness. Just prior to the deaths, there had been heavy rains in the area and the roof of the silo in which the pellets were stored had leaked, resulting in wetting of the stored feed. Circumstantial evidence suggested that the damp feed, in conjunction with a change from larger cubes to pellets, predisposed the animals to enterotoxaemia due to Clostridium spiroforme.

References.

Carman R. J. and Borriello S.P. (1983). Laboratory diagnosis of Clostridium spiroforme mediated diarrhoea (iota enterotoxaemia) of rabbits. Vet. Rec. 113:184-185.

Harris I.E. and Portas B.J. (1985), Enterotoxaemia in rabbits caused by Clostridium spiroforme. Aust. Vet. J. 62:342-343

NORTHERN TERRITORY - Lorna Melville

BERRIMAH AGRICULTURAL LABORATORY

Salmonellosis in Freshwater Crocodiles (L. Melville)

A crocodile farm at Berrimah experienced increased hatchling mortalities over several days. Animals which died were in good condition generally and appeared to be feeding until shortly before death. The only significant gross finding in all animals examined was a very swollen pale liver. In some cases there was a surface fibrin film.

Histologically there were multiple areas of focal necrosis in the liver with a mononuclear cell inflammatory response. Gram negative bacteria were present in the necrotic areas. Salmonella sp. (waiting serotyping from IMVS) was isolated from the livers of about half the animals.

Sparganosis in Farmed Crocodiles (L. Melville)

Slaughter of farmed crocodiles for skins and meat commenced in the N.T. late in 1987. While not subject to normal meat inspection procedures, a regular monitoring of carcasses has been carried out to try to detect possible human pathogens.

Recently two carcasses of freshwater crocodiles were submitted which contained large numbers of parasites throughout the muscle. The parasites were identified as the plerocercoids of a cestode probably Spirometra erinacei.

Eustrongylides in Fish (M. Pearce)

In April this year a number of rainbow fish, Melanotaenia splendida from the Adelaide River were presented with reddish subcutaneous nodules up to 5mm in diameter. The nodules were Eustrongylides larvae invested in a thin fibrous capsule. All fish had more larvae encysted in the peritoneal cavity.

More recently in May a cachectic mouth almighty, Glossamia aprion from the Moyle River died as a result of an enormous burden of Eustrongylides larvae in the peritoneum. Following death of the host, they burrowed through muscle and connective tissue and penetrated the skin and mucosa circa the right gill arch. Larvae in this case were up to 8cm long though larger ones have been recorded.

It remains uncertain whether another fish would act as a paratenic host should it swallow the larva or prey on an infected fish.

Larvae mature in the proventriculus of piscivorous birds and appear to be ubiquitous in many temperate and tropical fish species. Given that all infected fish were approximately 9-12cm, the sizes of the larvae were remarkable.

Reference.

Proceedings 106, Fish Diseases: a Refresher Course for Veterinarians Post Graduate Committee In Vet Science, Univ of Sydney.

Clostridial Rhinolabial Lesions in Dairy Calves (M. Bell)

A necrotic cellulitis of the rhinolabial area was found in 12 dairy cows which died over a period of 2 months. The initial gross change was a severe swelling of the muzzle and maxilla area with subsequent copious serous nasal discharge and discharge through numerous cutaneous fistulae.

The first case involved a calf which was placed in a large paddock after the swelling subsided. This calf appeared to have recovered, until 6 weeks later when it was found recumbent in the paddock. Post mortem of submissions revealed necrosis of nasal cartilage, dental pad, hard palate, muzzle and subcutaneous tissue over proximal nasal bones leaving only nerves and blood vessels between skin and bone. There were numerous resolving fistulae on the skin over the nasal bridge. Crepitation was evident extending up under eyes away from the necrotic areas. The hard palate was easily cut with a sharp knife.

Nasal smears from live animals showed Gram positive rods with subterranean spores.

Histology - lip, tongue, cheek and hard palate - extensive haemorrhage, purulent inflammation and necrosis with many Gram positive cocci and Gram positive and negative rods.

Bacteriology - a Clostridia sp. was isolated on several occasions, however, fluorescent antibodies are still on order.

The dairy replacement calves were kept in pens. There were numerous sites of potential damage to the gums including wire, sharp edged plastic buckets and short pandanus suckers. It is assumed injury to the tongue and gums allowed entry of the clostridia.

JOBLINE

A letter has been received from a U.K. firm specialising in obtaining scientists and executives for the pharmaceutical industry in the U.K. and Europe.

It suggests that there is a strong demand for Veterinary Pathologists, with employers anxious to recruit from non-industrial sources and give training in pharmaceutical research toxico-pathology.

Pathologists keen to explore possibilities further should contact K.W. Littlechild, Highclere Search Associates Limited, 26 Penwood Heights, Burghclere, Newbury. Berkshire RG15 9EZ. Telephone (0635) 254614 or 253821.

CLOSING DATES FOR COPY - VETERINARY PATHOLOGY BEPORT

Close	Publication
10th September	October, 1988
2nd December	January, 1989
4th March	April, 1989

FORTHCOMING CONFERENCES - CALL FOR PAPERS

THE VTH INTERNATIONAL SYMPOSIUM OF THE WORLD ASSOCIATION OF VETERINARY LABORATORY DIAGNOSTICIANS (WAVLD) will be hosted by the Canadian Association of Veterinary Pathologists at the University of Guelph, Guelph Ontario, Canada, June 26-30 1989.

Scientific sessions will cover Clinical Pathology, Bacteriology, Mycoplasmology, Mycobacteria, Molecular Techniques, Virology, Pathology, Toxicology, Zoonosis and Laboratory Safety, Immunology, Parasitology and Computer Applications. New Techniques in Veterinary Laboratory Diagnosis will be emphasized.

Deadline for submission of abstracts is January 1st 1989.

For information on Registration and submission of a Scientific Presentation, contact Dr. A.A, van Dreumel, Veterinary Laboratory Services Branch, Ontario Ministry of Agriculture and Food, P.O. Box 3612, Guelph, Ontario, Canada NlH 6R8.

3RD INTERNATIONAL SYMPOSIUM ON POISONOUS PLANTS

The 3rd International Symposium on Poisonous Plants (formerly called the U.S./Australian Symposium on Poisonous Plants) will be held in Logan, UT, USA, July 23-29, 1989. It will be open to all persons interested in or doing research work on poisonous plants. The symposium will consist of invited symposium speakers and submitted platform or poster presentations. For more Information contact the program chairman:

Dr. Lynn F. James
USDA-ARS Poisonous Plant Research Laboratory,
1150 East 1400 North
LOGAN, UTAH 84321 USA
Telephone: 801-752 - 2941

Those wishing to nominate papers are asked to contact –

Dr. Jeremy Allen,
Animal Health Laboratory,
W.A. Department of Agriculture,
Jarrah Road,
SOUTH PERTH. W.A. 6151

Dr. Barry Smith,
Ruakuara Agricultural Research Centre,
Private Bag,
HAMILTON. NEW ZEALAND.

Dr. Ross McKenzie,
Animal Research Institute,
655 Fairfield Road,
YEERONGPILLY. OLD. 4105