

The draft newsletter circulated to members has been accepted and it was agreed at the last AVPA meeting that there will be at least 4 issues a year which will be sent to all ordinary and sustaining members. The Secretary of AVPA will be the Editor.

While the Editor can probably fill up the newsletter with references from the literature, the major contribution to the newsletter should come from members of the Association who desire to communicate their ideas, experiences, comments etc., to other members. Your contributions are important in the success of this venture.

#### Infectious Laryngotracheitis

Bronwyn Dowling offers further advice concerning ILT in Queensland. During the late 60's about three cases a year were reported but in 1970, 24 cases occurred. Since then the frequency has declined to about 1 per annum. These were usually mild with mucoid tracheitis the only sign. In the last two years some haemorrhagic lesions have been seen. Only 7 properties are vaccinated at present. Four have been uneventful, but the other 3 have had repeated adverse vaccine reactions. The 1978 case referred to in the draft newsletter was on a poorly managed farm. Clean-up between the two affected batches was incomplete (litter reused) and was of 10 days duration only. A subsequent batch of chickens placed after a thorough clean-up and a six weeks spell, is now five weeks of age, showing no signs of respiratory disease.

Gordon Robertson of the Western Australian Department of Agriculture is investigating pathogenicity of virus strains, and suggests that the best method of comparing virus strains for pathogenicity at present would be to carry out a 50% lethal dose estimation ( $LD_{50}$ ) using aerosol method of administration and Australorp day old chickens. If anybody is intending to do such work, they should use the same strain of chicken that Gordon Robertson has used, and should include in the work a reference preparation namely, the vaccine virus strain (SA2).

A number of Victorian colleagues have indicated that the three severe epidemics of ILT which have gone through the Mornington Peninsular area in Victoria have led to discussions between Government and Industry Veterinarians to consider possible control measures.

The Poultry Digest of May 1967, Page 256, has an article indicating a co-operative approach to eradication of this disease in the Delmarva Peninsular in the U.S. Four integrated broiler organisations were involved and the

programme consisted of a period of vaccination of all flocks in a stated area, accompanied by strict hygiene procedures. At the end of this period vaccination was to cease and any further outbreaks were to be quarantined, slaughtered and indemnity paid to the growers by the processors. Does anybody know whether this programme was successful?

A U.K. correspondent indicates that outbreaks of ILT following vaccination with 5% morbidity and 1% mortality, are thought to be the result of misuse of the vaccine, particularly by aerosol administration. No research work on this virus or the vaccine is occurring in U.K. at present.

Hugh Bray tells me that extensive vaccination conducted by Departmental officers in South Australia have led to a complete disappearance of clinical outbreaks of this disease over the last 3 years.

Should we give serious consideration to eradication attempts in Australia?

#### Preservation of Coccidia

The usual method of storage of oocysts in 2% Potassium Dichromate at 4°C at concentrations up to  $5 \times 10^5$  per ml keeps the organisms for about 1 year. Sporocysts and Sporozoites may be kept in liquid nitrogen. See articles by Doran, D.J. in *J. Parasit.* 55: 1229 (1969) and Norton, C.C. and Joyner, L.P. *Res. Vet. Sci.* 9: 598 (1968). A good general reference for laboratory techniques is Long et al in *Folia Veterinaria Latina* 6:3:201 (1976). Permanent storage of selected organisms for reference purposes could be very useful in Australia. (Colleagues in coccidiostat organisations should get together with a view to financing the establishment of such a reference centre. Costs should be in the vicinity of \$3000 to set up the storage. - Editor).

A number of colleagues have mentioned difficulties with high and low levels of various Coccidiostats in recent times. Many of these cases have been associated with attempts to adjust coccidiostat levels to a restricted feeding programme in breeders or layers. There appear to be two schools of thought concerning the method of action of coccidiostats. One school says that the level of coccidiostat should be increased when restricted feeding is carried out because the effect is dependent upon the bodyweight of the bird and thus intake must be increased if restricted feeding is practiced. The other school of thought says that the effect depends upon the level of coccidiostat in the gut contents and thus there is no need to increase levels during restricted feeding. Any comments?

#### Newcastle Disease Vaccination

A paper By Malkinson M, and Small P.A., in the proceedings of the Federation of American Societies for Experimental Biology (1977) 36: 3:1229, investigates the importance of local immunity versus systemic

immunity following exposure to Newcastle Disease Virus at various infectable sites. Using chicks 4 days of age, 20 were infected in the air sac and 12 in the eye. Of the first group, 10 were challenged 14 days later by eye route and all were reinfected, but of 10 challenged in the air sac only 2 were reinfected. In the second group, of 6 challenged by the eye 1 was reinfected, whereas all 6 challenged in the air sac were reinfected. A similar smaller experiment with adult birds supported this result. These results are consistent with the hypothesis that local rather than systemic immunity is responsible for prevention of ND infection of chickens.

#### Wet Droppings - diabetes insipidus

Bronwyn Dowling has commented on the previous article on this subject indicating that she considers the condition similar to that seen in Australia, however, the water intake is much lower in Australian birds than that reported in the U.S. She points up the importance of seeing more work on the effects of water restriction on hormone and electrolyte levels before drawing any conclusions.

#### Fungal Diseases

Once again Bronwyn has commented enquiring as to how you keep Boric Acid or antibiotics in an aerosol for 1½ hours. Very fine particle aerosols will stay suspended for quite a long time, but the details can only be discovered if somebody can read Russian, in which case I will send them the references.

#### Erysipelas

If you investigate a disease similar to Fowl Cholera and are unable to isolate the organism, you should keep Erysipelas infection in mind. Two outbreaks in Denmark are described by Bisgaard and Olsen (1975) Avian Pathology 4: 59. Birds died within 24 hours with septicaemic signs including multiple petechial haemorrhages in subperitoneal fatty tissue. The liver was dark red and swollen. In some of the birds, diffuse greyish yellow spots were observed in the liver ranging in size from pinpoint to 4mm diameter.

#### Avian Influenza (Fowl Plague)

The Fowl Plague Virus isolated by Turner (Australian Veterinary Journal, 1976 52:384 has an antigenic structure Hav<sub>1</sub> Neq<sub>1</sub>, and a recent article by Downie et al in the Australian Journal of Experimental Biology and Medical Science (1977) 55: 635 reports the isolation of 3 influenza viruses from sea birds. In addition, 4 sera from Noddy Terns on North West Island, in the Great Barrier Reef were found to have NI antibodies

to the Australian Fowl Plague virus and 3 of these 4 also had detectable levels of HI antibodies to the virus.

#### Chemical Pasteurisation of Broiler Carcasses

Thompson et al in the Journal of Food Science (1977) 42:5: 1353 report on the use of glutaraldehyde in control of Salmonella and extension of the shelf life of broiler carcasses. This compound is a commonly used disinfectant and is showing some promise in these investigations. Shelf life was extended by 6 days at 2<sup>0</sup>C and an inoculum of 250 Salmonellae did not survive on carcasses prechilled for 30 minutes in an 0.5% solution of the compound.

#### Lysteriosis in Fowls

An interesting article is summarised in the Veterinary Bulletin, 1973 43: 5 Abstract No. 1999. Birds dying in an outbreak apparently caused by this organism showed, in the acute form, serous pericarditis, myocarditis, perihepatitis and follicular degeneration. A later more chronic form had a less specific autopsy picture with salpingitis and follicular degeneration.

#### Moulting in Parrots

Apparently, loss of feathers is an important clinical problem in caged birds and treatment is possible with the use of a substance called Medroxy progesterone Acetate. This is an Upjohn product and is described in an article by Rad, M.A. in Avian Pathology 511: 155 (1976). Doses are given in the article.

#### Respiratory Mites in Finches

Some of us may not be aware of the method of control of respiratory mites in caged birds described by Dr. M.D. Murray in the Australian Veterinary Journal (1966) 42: 262. This report describes the use of carbaryl. In the experiment, the control ration consisted of millet grain coated with olive oil (1ml olive oil to 50g millet). Once a week, for 3 weeks, the grain fed to the treated group was replaced with 50g of millet coated with olive oil in which 0.05g 80W Sevin (a wettable powder containing 80% carbaryl supplied by Union Carbide) was thoroughly mixed. This was fed for 18 to 24 hours. 0.05g of Sevin is equivalent to 0.04g of carbaryl

#### Mite Control with Carbaryl

A Russian report quoted in Poultry Abstracts 1977 3:8:282 reference 1849, indicates that the use of carbaryl by spraying in an 0.25% aqueous suspension at the rate of 200ml per m<sup>2</sup>, or two sprayings with aerosol at 25ml per m<sup>2</sup> of floor surface, controlled mites. Another report in the same copy of Poultry Abstracts, reference 1850 quotes the use of Chlordimeform

and Tetrachlorvinphos. The first compound is used as an 0.06% low pressure spray and was effective for 90 days. The second compound was equally effective as an 0.5% low pressure spray and was more rapid in its effect.

#### Emerging Virus Problems in Layers

A German report in Poultry International, March 1978, Page 61, suggests that Infectious Bronchitis Virus, Reovirus and Adenovirus infections are common in layers leading to repeated drops in egg production. Reovirus and Adenovirus immunisation programmes are considered to be necessary. This appears to be the case in Australia also.

#### Newcastle Disease Virus (apathogenic) in Drop in Egg Production

Swarbrick, O, reported to the W.P.S.A.'s Spring Conference (1977) in England, the results of investigations into egg production problems in layers. The problem was associated with a high level of second quality eggs. There were no significant breed, feed, rearing, management, Infectious Bronchitis or CELO Virus Correlations. Increasing ND titres were noted as the birds got older, although they had not been vaccinated after 15 to 16 weeks of age (with La Sota). He suggested that forms of the virus similar to the Australian or Northern Ireland strains could be involved, and recommended oil emulsion, ND vaccination by injection at 20 weeks of age. Do we have this problem in Australia?

#### Drop in Egg Production and Salmonella Infection

A single dose of  $1 \times 10^{10}$  of Salmonella typhimurium was administered to layers in cages. All birds became ill with signs of depression, inappetence and diarrhoea. Variable drops in egg production affected different groups of birds. This report by Brayon and Brand in British Veterinary Journal (1978) 134:92 reports on the use of a strain of the organism isolated from a field outbreak of disease in broiler breeders. The organism was not isolated from the shell or contents of eggs laid by infected birds. The possibility of Salmonella being involved in drops in egg production and in the wet droppings problem, must be kept in mind.

#### Beware of Positive Adenovirus Results

A paper by Cowen et al (1978) Avian Diseases 22:1:115 indicates that virus isolation and serum antibodies can be obtained in birds with no clinical signs during rearing and when in production. One must be wary of ascribing pathogenic affects to Avian Adenoviruses.

#### Marek's Disease Vaccination Failures

A recent article submitted by DeKalb, in Poultry International, March 1978, Page 65, suggests that effective vaccination protection with HVT vaccine

depends upon correct vaccination with a high potency vaccine. In addition, they suggest the birds must be placed in a clean environment and protected for three weeks. Good ventilation and air dilution are considered important in maintaining reduced challenge to the pullets - particularly important under winter brooding conditions.

These same problems could arise in Australia and your experience with partial or complete vaccine failures could be useful to your colleagues.

#### Infectious Bursal Disease Virus interfering with Marek's Immunity

A German report quoted in Poultry Abstracts (1977) 3:10:369 Abstract 24113 indicates a low immunity following Newcastle Disease Vaccination and a mortality of 7% by 16 weeks of age from Marek's Disease following HVT vaccination. The cause was ascribed to Infectious Bursal Disease Virus immunosuppressive effect.

#### Day Old IB Vaccination

Two Dutch workers Davelaar and Kouwenhoven (Avian Path. 5:39 (1976) and 6:41 (1977) have reported on the involvement of the Harderian gland in immunity to IB infection. Results suggest that vaccination at day old may have a future and, no doubt, further research will be relevant to the Australian situation. This work suggests that the absence of serum neutralising antibody may not indicate an absence of immunity.

#### Attenuated Coccidiosis Vaccines

Two Chinese workers Fu and Lee in the Journal of the Chinese Society of Veterinary Science (1976) 2:51 (quoted in Poultry Abstracts 1977 3 Abstract 1859), have shown that inactivation of E. tenella oocysts with crystal violet, acriflavine, formalin, phenol or methylene blue is effective in protecting birds against challenge with virulent E. tenella for up to 60 days. (Crystal violet 0.05%, acriflavine 1%, formalin 3% were best).

#### Some People are Still Concentrating on the Important Problems

Iqbal et al in the Pakistan Journal of Agricultural Sciences (1974) 11:47 report on comparative studies on six methods for preparation of hard boiled eggs. Everybody will be pleased to know that the best results were obtained by placing the eggs in boiling water, then reducing the temperature to 85°C, cooking for 18 minutes, then cooling in running water for 5 minutes.

#### Salmonella in Raw and Pasteurised Liquid Whole Egg - in Queensland

B. Teal from the Queensland Department of Primary Industries reports in the Queensland Journal of Agricultural and Animal Sciences (1976) 33:1:13 on samples of liquid whole egg from various stages of manufacture, as well as from the factory environment. 29 Salmonella serotypes were found in 351

of the 8,691 samples. Sampling of individual eggs revealed an incidence of 0.2% whereas bulk unpasteurised liquid egg had a 15.3% incidence of Salmonellae. Pasteurisation reduced the incidence of Salmonellae from 20.6% to 0.04%.

A lot of our concentration on Salmonella contamination has been in broiler chickens, perhaps the humble egg should be watched also.

#### Investigation of the Use of Fenbendazole (Hoechst) in Worm Control in Poultry

The manufacturer reports in "The Blue Book" 27 (1977) Page 260, a series of trials with this compound against Ascaridia, Heterakis, Capillaria and Syngamus infections. These reports suggest that we may have a very useful product for use in poultry internal parasite control in the future. Fenbendazole is not registered in N.S.W. for use in poultry. Syngamus occurs in many Australian native birds.

#### Abnormal Caecal Droppings

Canadian workers have shown that a compound used as a pellet binder (Lignosol FG) when used at levels over 1.5% causes caecal contents to be dark brown, shiny and gelatinous. If used at 1% level or less, abnormal droppings did not occur. Does anybody know if this compound is used in Australia and, if so, is it associated with such a problem?

#### Vitamin A and Disease Control

I have often wondered why so much Vitamin A is administered to sick chickens and while there are a few papers supporting this in particular diseases, there is a Russian report in Poultry Abstracts (1977) 3:12:445, Abstract 2943 which reports that the serum antibody content of immunised chickens was increased two to five fold by large amounts of Vitamin A in the diet.

Perhaps somebody should do a cost-benefit analysis on Vitamin A use.

#### Engineering and Poultry

Two reports from the American Society of Engineers are contained in Poultry Abstracts 1977 3:7; Abstract 1387 and 1460. The first indicates that brooding chickens at 25°C instead of the normal 35°C has no effect on broiler weight gain, feed conversion or mortality, except in the presence of disease (Aspergillosis).

The second report shows benefits of roof insulation in 7 to 8 week broilers.

#### Recycling Water in Poultry Processing Plants

Lillard in Journal of Food Science 42:168 (1977) produces microbiological results suggesting that untreated water from the giblet splitter or chiller in a poultry processing plant, may be recycled to the giblet

flume without sacrifice of product quality. Such a rational approach to the problem of water conservation in processing plants could lead to considerable benefits to the processor.

#### Save Chilled Water in Poultry Processing Plants to Save Money

Food Engineering International (1977) 2:4:31 reports that the use of heat exchangers to cool incoming water by using chilled water overflow has led to considerable financial savings. For a production rate of 8,100 birds per hour, 2.8 tonnes of ice per hour may be saved. Heat exchangers may also be used to save steam by heating incoming water with overflow from the scalders.

#### Water Conservation in Poultry Processing

An excellent article on this subject appears in Poultry Processing and Marketing, November 1977, Page 21.

#### Day Old Debeaking Prevents Cannibalism in Layers

Lee and Reid in Poultry Science (1977) 56:3:736 report an experiment which demonstrated that debeaking at one day of age by removing approximately two thirds of the upper beak prevented cannibalism in layers for life.

#### Feed Additives for Fly Control

Miller reports, in the Proceedings of the Maryland Nutrition Conference for Feed Manufacturers (1976) Page 15, on investigations into the use of systemic insecticides or insect development inhibitors being added to the feed of cattle and poultry. It appears that some people still hope to control housefly breeding in cage bird manure by this means. The problem of tissue residue is a big factor in preventing the use of existing compounds.

#### Effect of Cold Exposure on Immunity

Rao and Glick (1977) Poultry Science 56:3:992 report that chronic cold exposure of chickens increases antibody titres while exposure to 32.2°C and above significantly depresses agglutinin levels. Intermittent cold exposure has the effect of increasing some antibodies and decreasing others.

#### Adenovirus Reviews

Two interesting reviews have recently been produced, one is by Jane Cook in the World Poultry Science Association Journal (1978) 34:1:38 and the other is McFerran and Adare (1977) Avian Pathology 6:3:189.