

Avian Pox Virus Infection. Pox virus infection is common in birds the world over. Representatives of many families have been observed with the wart-like masses which develop on the skin of the feet, legs, body, eyes, nostrils or mouth and pharynx.

The virus probably establishes only after the skin is broken, and transmission can be mechanical — e.g. from an infected perching area into the skin of the foot, or may be accomplished by the agency of a biting insect, especially mosquitoes. The virus proliferates locally causing enlargement and increased production of the epithelium of the skin — hence the wart-like masses. The birds may rub these masses and spread the infection over other parts of the body, and the virus may enter the blood stream and infect internal organs occasionally.

After a period of weeks or months the nodules regress and the bird is probably immune to further infection. Only in some cases is the disease fatal — if the condition is widespread over the body, or if the nostrils or pharynx become involved and the bird cannot breathe or swallow properly.

There are many varieties or strains of avian pox viruses, the most familiar being those infecting domestic species, such as fowl pox, pigeon pox and canary pox. Each strain is capable of infecting only a restricted range of host species, and it may protect these birds against infection with other strains of pox virus by inducing immunity, much like human vaccination against smallpox. The host ranges and immune cross-protection of the various strains is a complex area of study which is still developing.

There are few reports in the scientific literature on pox virus infection in birds from Australasia, and bird observers are undoubtedly more aware of its prevalence in wild birds than persons involved in studies of avian diseases. Recently we had the opportunity to study pox virus infection in the White-backed Magpie *Gymnorhina hypoleuca*, a species which, around Melbourne at least, seemed to have a high prevalence of infection in late 1973-early 1974. The virus and the disease it produces are typical. The host range of the virus appears to be restricted, since chickens, turkeys, pigeons and canaries could not be infected, although infection could be invariably induced in young magpies, using suspensions of virus. There appeared to be no cross protection between magpie-pox and fowl and pigeon pox in chickens, turkeys or pigeons.

A request in *The Bird Observer* for information on sightings of birds with pox-like lesions elicited eight replies, from as far as Grafton, N.S.W. Disease consistent with pox virus infection was described in *G. hypoleuca* in Victoria and in birds which were probably *G. tibicen* in N.S.W.; the preponderance of birds involved were probably immature and had not had the opportunity to develop immunity through previous exposure. A pox-like nodule was also reported from a Black Swan *Cygnus atratus*. This observation will need confirmation by actual examination of such a

nodule for virus, since pox has yet to be described from Anatids. Mudlarks *Grallina cyanoleuca* and Eastern Silvereyes *Zosterops lateralis* were also observed to be infected in N.S.W. The latter report confirms the suspicions of workers in New Zealand who found silvereyes in that country to be infected, and predicted that pox virus probably came in with the colonization of silvereyes from Australia which occurred in the mid 19th century.

Study of avian pox virus is of some significance, since infection may play some part in modulating the size of populations of the host. The host range of viruses is of interest, since there is evidence that pox viruses introduced with exotic species of birds into isolated ecosystems, particularly in the Hawaiian islands, may have infected and reduced the size of populations of some of the native avifauna. Bird observers can greatly assist the study of this and other conditions potentially detrimental to our wild bird populations by drawing the attention of State Fauna Authorities, museums, or students of avian or wildlife disease to unusual reports of mortality or to diseased birds, or by submitting involved specimens for scientific study.

FURTHER READING

- Austin, F. J., P. C. Bull & M. A. Chaudry, 1973. A Poxvirus isolated from Silvereyes (*Zosterops lateralis*) from Lower Hutt, New Zealand. *J. Wildl. Dis.* 9: 111-114.
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- Lee, D. J. & F. Fenner & J. J. Lawrence, 1958. Mosquitoes and fowl pox in the Sydney area. *Aust. vet. J.* 34: 230-237.
- By I. K. Barker, Research Fellow Wildlife Diseases,
C/O Dr. K. E. Harrigan, Veterinary Clinical Centre,
University of Melbourne, Princes Highway,
Werribee, Victoria, 3030.
- [and see also Klapste, J. & P. Klapste, 1978. A blind Little Raven nestling. *Aust. Bird Watcher* 7 (5): 164. A connection possibly exists between these two papers. — Hon. Editor]