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ISOLATION AND CHARACTERISATION OF ADENOVIRUSES AND
REOVIRUSES OF DOMESTIC HENS IN NEW ZEALAND

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ABSTRACT

This investigation was undertaken to determine whether or not adenoviruses or reoviruses could be recovered from domestic hens in New Zealand. Using cultures derived from neonatal chicken kidney tissue 30 cytopathic agents were recovered from domestic hens.

Electron microscope examination following staining by sodium phosphotungstate showed that 25 of these agents had the morphology of adenoviruses and the remaining 5 agents were morphologically indistinguishable from reoviruses.

Some selected strains of adenoviruses and reoviruses were subjected to physico-chemical tests and it was found that both groups of agents were unaffected by chloroform and the replication of adenovirus strains, but not the reovirus, was inhibited by IDU. These results provide confirmatory evidence for the identification of these agents as avian adenoviruses and reoviruses. The avian adenoviruses like the analogous mammalian agents were found to have diminished thermostability in the presence of $1.0M Ca^{++}$.

Cross-neutralisation tests showed that four serologically distinct adenovirus strains were recovered and 16 of the remaining adenovirus isolates were assigned to one or other of the four serotypes. All 5 reoviruses were assigned to one serological type on the basis of neutralisation tests.

A preliminary serum survey for neutralising antibody to the 4 adenovirus serotypes showed that antibody to one or more of these viruses was present in a high proportion of flocks of domestic fowl in the Manawatu district of New Zealand and antibody to two of the serotypes was particularly common.

This work represents the first report of the recovery of avian adenovirus and reovirus from domestic hens in New Zealand. However their clinical and pathological significance remain to be investigated.

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