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**A STUDY OF THE MULTIPLICATION
OF AVIAN ENCEPHALOMYELITIS VIRUS IN CHICK
EMBRYO FIBROBLASTIC CELL CULTURES**

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1) In the growth curve experiment of egg-adapted AEV (AEV-VR strain) in chick embryo fibroblasts (CEF), the maximum virus infective titer (about $10^4\text{EID}_{50}/\text{ml}$) was obtained after the 6th or 7th day of inoculation. The virus titer increased earlier in the case of the heavy inocula compared with the small inocula. In both cases, however, the virus titer of approximately $10^3\text{EID}_{50}/\text{ml}$ persisted in culture fluids for at least 28 days. Non-egg-adapted AEV (one strain and one field isolate) propagated in the cells similarly to the egg-adapted AEV. Neither a cytopathic effect nor an inclusion body was observed in the cell cultures infected with both AEVs. No AEV-antigen positive cell was detected by the direct fluorescent antibody technique (FAT).

2) The egg-adapted virus propagated better in subcultured cells than the primary cells. The highest virus titer ($10^{4.8}\text{EID}_{50}/\text{ml}$) was obtained at the 7th day postinoculation in the 20th subcultured cells. The cells infected with the egg-adapted AEV were subcultured 10 times. Culture fluids of the subcultured cells gave the virus titer of approximately $10^2\text{EID}_{50}/\text{ml}$ in every passage. However, the immunofluorescent-cell was not detected in the subcultured cells.

3) The CEF, similarly cultured from chick embryos infected with the egg-adapted AEV, indicated higher virus titer after the 10th day of cultivation or later and the maximum titer ($10^{4.8}\text{EID}_{50}/\text{ml}$) was obtained on the 28th day. A few immunofluorescent-cells were observed by the FAT from the 4th to 9th day after cultivation.

4) The propagation of egg-adapted AEV was improved a little by the addition of one-day-old chick serum, and a few immunofluorescent-cells were detected by the FAT at the 4th day postinoculation.

5) The egg-adapted AEV propagated equally well at 40°C as at 37°C , but the viral replication was depressed considerably at 25°C and 30°C .

6) Viruses collected from each of the cell cultures described above were neutralized with a known AEV antiserum.