4) In the two groups transfused with the blood stored for 3 and 6 weeks, the 2, 3-DPG content was depleted during the 3-hr post-transfusion period but restored to the initial value after 1 day, and hemoglobinemia and hemoglobinuria were observed in both groups.

STUDIES ON THE HEMAGGLUTINATING ACTIVITY OF PARAMYXOVIRUS ISOLATED FROM JAPANESE SPARROW-HAWKS

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The Takavirus, a variant of Newcastle disease virus (NDV), isolated from Japanese sparrow-hawks, was found to agglutinate unstablly chicken erythrocytes at room temperature. The purpose of these experiments was to analyse the cause of this phenomenon. The results may be summarized as follows: 1) the plaques of the Takavirus formed in the chick embryo fibroblasts (CEF) were heterogeneous in size. Two clones were isolated from the plaques: one showed a hemagglutinating (HA) reaction at only 4°C (L^+R^-); and the other showed an HA reaction at both 4°C and at room temperature (L^+R^+). 2) in attempts to purify these clones by serial passages in the CEF and in embryonated eggs, we were unable to obtain the purified viruses as a single population; however, 2 progenies, which were obtained from different embryonated eggs were found to be composed mainly of either L^-R^- or L^+R^+, and these progenies were used in the following experiments. 3) when the polypetides of the 2 clones of Takavirus and the 2 strains of NDV were compared by polyacrylamide gel electrophoresis, there was no difference in the molecular weight of the viral proteins among the viruses; 4) the elution of L^+R^- from the chicken erythrocytes occurred more rapidly at room temperature, and the amount of the eluted virus was greater than that obtained from L^+R^+ or NDV. The HA reaction did not occur when the fresh viruses were newly added to the erythrocytes which had eluted the viruses; 5) neuraminidase (NA) activity of these viruses was examined under various conditions; however, no difference was noted between the Takaviruses and the 2 strains of NDV in several substrates or at different reaction temperatures used. However, when the NA activity was examined under pH 7.2, where the HA reactions were usually carried out and where the value of NA/HA was calculated, the value of L^+R^- was larger than that of L^+R^+ or NDV; 6) the hemolytic activity of the Takaviruses and the NDV-Sato strain was lower than that of the NDV-

B 1 strain or other avian paramyxoviruses; 7) there were no apparent serological differences between L^+R^- and L^+R^+.

These findings revealed that the Takavirus may be a variant of NDV, and that the HA reaction of the virus is converted into negative reaction at room temperature. This phenomenon may be due to the high NA activity of the virus.

ADHESION OF PILIATED *CORYNEBACTERIUM RENALE* TO BOVINE BLADDER EPITHELIAL CELLS WITH SPECIAL REFERENCE TO pH DEPENDENCY

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The adhesion of *Corynebacterium renale* strain 115 to bovine bladder epithelial cells was studied using two clones of the bacteria, piliated (P^+) and nonpiliated (P^-).

Initial experiments were designed to determine the optimal conditions for adhesion of *C. renale* to bovine bladder epithelial cells. The adhesion of P^+ bacteria to the cells increased with elapsed time; the most rapid increase in adhesion was observed during the first 60 min of incubation. A decrease in the adhesion of P^+ bacteria was observed with the increasing NaCl concentration of the incubation medium from 136 to 348 mM. The adhesion of P^+ bacteria was not influenced by temperatures set at 2, 22, 30 and 37°C. The adhesion of P^- bacteria was poor and not influenced by these conditions.

The influence of pH on the adhesion of P^+ bacteria were examined. The number of P^+ bacteria which adhered to the cells was large at pHs above 7.6 but small at pHs below 6.8. The number of adhering P^+ bacteria per cell decreased strikingly after the pH of the mixture was lowered from 7.4 to 6.4. On the contrary, the number of adhering P^+ bacteria per cell increased strikingly after the pH of the mixture was raised from 6.4 to 7.4.

The adhesion of P^+ bacteria was inhibited by antipili serum. The adhesion was not inhibited by amino acids and sugars, including mannose, and was not influenced by Ca^{2+} and Mg^{2+}. P^- bacteria hardly attached to the epithelial cells, irrespective of the pH and other factors.