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**STUDIES ON THE ANTIGENIC VARIANTS OF AVIAN INFLUENZA
A VIRUS (A/TERN/SOUTH AFRICA/61, HAV 5 NAV 2)
OBTAINED IN THE PRESENCE OF HOMOLOGOUS ANTISERUM**

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An avian influenza A virus, A/tern/South Africa/61 (Hav 5 Nav 2), was serially passaged in the presence of homologous antiserum in embryonated eggs, and two antigenic variants (P-20 and P-39) were isolated after 20 and 39 passages. Another antigenic variant (V-9) was isolated from the P-20 after 9 passages of the P-20 in the presence of anti-P-20 serum.

The P-20 gave a hemagglutination-inhibition (HI) titer with antiparent serum that was 4 times lower than that given by the homologous virus; the parent gave a HI titer with anti-P-20 serum that was twice lower than that by the homologous virus. No difference was found between these viruses in cross-neuraminidase-inhibition tests. In immunodouble-diffusion tests the parent and the P-20 were partially identical. These data show that the P-20 contains hemagglutinin antigen different from the parent. The P-39 differed from the parent in both hemagglutinin and neuraminidase antigens. This is the first neuraminidase antigen variation obtained *in vitro*. The V-9 differed from both the parent and the P-20 in hemagglutinin antigen but not in neuraminidase antigen.

The antigenic relationship of the parent with the following avian influenza A viruses, A/turkey/England/63 (Hav 1 Nav 3), A/duck/England/56 (Hav 3 Nav 1) and A/duck/Czech./56 (Hav 4 Nav 1), and the antigenic relationship of the P-20 and the V-9 with the same avian influenza A viruses were not different.

These findings indicate that the antigenic drift may occur in avian influenza A viruses, as human influenza A viruses, and that A/tern/South Africa/61 (Hav 5 Nav 2) may not be antigenically closely related to the above avian influenza A viruses as the result of the antigenic drift.