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4) The possibility that visceral pain produced by visceral stimuli in this experiment may account for the inhibitory and excitatory effects. The mechanism through which these effects are mediated are discussed.

STUDIES ON *ESCHERICHIA COLI* ISOLATED FROM DISEASED CHICKENS, SPECIAL REFERENCE TO O GROUP OF THE ISOLATES

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(Summary of Masters thesis written under direction of Dr. S. MIURA)

Two hundred and fifty-one strains of *Escherichia coli* were isolated from visceral organs (heart, liver, spleen, kidney, lungs), trachea, airsacs, and other organs of 89 out of 242 (220 removed and 22 dead) diseased chickens of T farm on Hokkaido from April 1964 to March 1965.

The strains of *E. coli* were investigated based on their serological types, especially their O groups, and on their sensitivity to some antibiotics. In addition, O titrations of 156 serum samples from 220 culled chickens were undertaken via the tube test with antigen of O groups 1, 2, 8, and 78 which are known as the most popular O groups in chickens.

The results of the experiments may be summarized as follows:

1) Using 45 types of *E. coli* O antisera (43 known and 2 unknown—O1, -2, -3, -4, -5, -6, -8, -11, -15, -16, -18, -21, -22, -25, -26, -28 ac, -44, -53, -54, -55, -60, -69, -71, -73, -75, -78, -83, -86, -88, -109, -111, -112 ac, -113, -115, -125, -126, -131, -137, -138, -139, -140, -141, -144, 8-18, and Y 813), 147 (58.7%) of the 251 strains were typed into 17 O groups.

2) Of the 147 strains typed, 54 belonged to O group 2, 26 to O 78, 21 to O 8, 19 to O 1, 9 to O group 8-18, 3 each of O groups 109 and 140, 2 each of O groups 53 and 88, and the remaining to O groups 21, 25, 26, 54, 73, 131, 139, and Y 813.

3) Of the 251 strains tested for sensitivity to antibiotics in vitro, 64 (25.5%) were resistant to tetracycline, 1 (0.4%) to streptomycin, and 12 (4.8%) to both tetracycline and streptomycin, but all were sensitive to chloramphenicol.

4) Thirty-nine of 156 serum samples were positive in a titer of 1:5 or more for *E. coli* O group 1, 40 for O 2, 7 for each of O 8 and O 78. The maximum titer was 1:80 or more to O 1 (3 samples) and O 78 (1 sample), and 1:40 to O 2 and O 8 (each 1 sample).