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**ADHESION OF *CORYNEBACTERIUM RENALE*, *C. PILOSUM*
AND *C. CYSTITIDIS* TO BOVINE URINARY
BLADDER EPITHELIAL CELLS**

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Adhesion of *Corynebacterium renale*, *C. pilosum* and *C. cystitidis* to the cells of various epithelial cell layers of the bovine urinary bladder was examined. Adhesion was most efficient to the urinary sediment epithelial cells and to the superficial cells immediately before shedding, followed by the remaining superficial cells and the intermediate cells in this order, and was least efficient to the deeper intermediate and basal cells. Of the strains used in these experiments, *C. renale* 115 P⁺ (piliated clone) adhered most efficiently, and the remaining strains of *C. renale* including 115 P⁻ (non-piliated clone), *C. pilosum* and *C. cystitidis* adhered less efficiently.

When the intermediate cells were incubated in phosphate buffered saline or Dulbecco's modified Eagle medium supplemented with 5% calf serum, there was a significant increase in the number of adhering bacteria. This increase occurred in the first 2 to 6 hours of incubation. On the other hand, in the case of the superficial cells, the increase of bacterial adherence after incubation was very small.

These findings suggested that corynebacteria from bovine urinary tract adheres most efficiently to the aged epithelial cells and least efficiently to the undifferentiated cells.

An attempt to classify the pili of *C. renale* was made based on the inhibition by anti-pili sera of adherence of the bacteria to the urinary sediment epithelial cells.

Of the 34 strains used in the experiment, adherence of 14 strains to the cells was inhibited by anti-No. 115 pili serum, 11 strains were inhibited by anti-No. 109 pili serum, and 9 strains were not inhibited by any of the anti-No. 115 pili serum or the anti-No. 109 pili serum.

These findings indicated that the pili of *C. renale* are divided into at least three groups.