

**3-1-1. Ultrastructure of the Rectum Epithelial Cells in the American  
Cockroach, *Periplaneta americana*.**

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The epithelium of the rectum in the american cockroach, *Periplaneta americana*, was observed with electron microscopy. The rectal epithelium of posterior hindgut was composed of rectal pads which were covered with cuticular intima on the luminal side. The rectal pads were composed of columnar absorptive cells, junctional cells and basal cells. The apical plasma membrane of columnar cells was made of regular invaginations, where mitochondria were associated with some of the invaginations. The lateral plasma membrane was infolded and space was an uniform width of approximately 200Å. Well developed mitochondria were found closely associated with infoldings and these were referred to as the "mitochondrial-scalariform complex." A septate junction was found near the apical zone between the columnar absorptive cells. The epithelium was surrounded by the periepithelial space and muscles. The periepithelial space which was composed of fivrous connective tissue, was innervated by many tracheoles and axons.