

**C103** Electron Microscopic Study of Postmortem Hair Shaft in Human

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The morphological and histological changes in normal and weathering hair shafts were investigated by using the light and electron microscope. The fresh hair was collected from the upper part of the root, and the hair with environmental or chemical damage from the end of its length, and the hair with postmortem changes from the bodies of 5, 10, 15, 20, and 25 years after dying. The outer layer of the normal hair shaft, flat cuticle cells should lie flat in a regular overlapping pattern, arrangement very much like roof tiles, which serves as a protective barrier. This cell was about 100 $\mu$ m long and 0.4 $\mu$ m thick, being full with intercellular membrane complex which was 25nm in diameter. The morphological and histological characteristics of the hair shaft after 5 years postmortem was similar to that of normal hair shaft. Those after 10 years postmortem were almost same as those after 5 years postmortem. But some of cuticle cells were open out, causing a drop out of the hair shaft. The hair shaft after 15 years postmortem was damaged severely. The cross sectioned photograph of the hair shaft showed the breakdown of that started from inside near medulla was unlike the alive. The hair shaft after 20 years postmortem was damaged more severely. The photograph of a cross section of it showed the cortex was almost broken. So, the shape was almost same as bamboo. There were a few of cuticullr cells in its surface. The hair shaft after 25 years postmortem only kept the shape without cuticular cells.

**C104** Comparative Histology of the Rectal Epithelium of Cockroach  
3 Species(Order: Blattaria)

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The rectal epithelium of *Periplaneta japonica*, *P. americana*(Blattidae) and *Blattella germanica*(Blattellidae) was comparatively studied with light and electron microscope. The epithelium of the rectum of cockroach species was composed of a single layer of absorptive cells surrounded on the luminal side by cuticle and on the hemocoel side by muscle layer. The apical plasma membrane of absorptive cells was made microvilli, where mitochondria associated with some of the microvilli. The lateral plasma membrane was highly infolded and space was an uniform width of approximately 200Å. Well developed mitochondria were found closely associated with the infoldings and this was referred to as the "mitochondrial-scalariform complex". A septate junction was found near the apical zone between the columnar absorptive cells, Whereas many desmosomes and intercellular spaces were formed between the columnar cells. Basal cells were bowl-shaped where the convex surface was inlaid into the basal surface of the columnar cells while the concave surface faces the basal lamina.