Z2 1 1 Structure and histochemistry of the alimentary canal of two species (Pisces: Cobitidae) in mud loaches, *Misgurnus,* from Korea

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The Korean mud loaches, *Misgurnus anguillicaudatus* and *M. mizolepis,* inhabit the mud bottoms of the stagnant ricefields or swamps, which undergo periodic drought and are subjected to be a reduction of the dissolved oxygen. The true stomach in the two species was replaced by an intestinal bulb. In the histological experiments of four regions of the alimentary canal (oesohagus, intestinal bulb, intestine, rectum), the epidermis of the mucousal layer was provided with numerous capillaries and the mucous cells were mainly acid mucosubstances in nature. The air-pathway was 2.6 μm in *M. anguillicaudatus,* 0.7 μm in *M. mizolepis.* The above features suggested that the two species accompany respiration by the intestine with gill respiration, called the dual respiration. It was considered that *M. mizolepis* was greater than *M. anguillicaudatus* in the ratio of the intestinal respiration based on the structure of the alimentary canal.

Z2 12 Sidestream Smoke Effects on Bronchus Ultrastructures in Rats

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The bronchus and alveoli from young rats have been examined by electron microscope following exposed cigarette smoking. Experimental animals were exposed to sidestream smoke for 45 minutes per day during four weeks. Transmission electron micrograph represented numerous neutrophils and macrophages in alveolar tissue. Scanning electron micrograph showed loss of cilia, increased cell size of many goblet cells in bronchus. We observed that airway cell injury by passive smoking were evident in lung tissue.