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Morphology of Lung of *Rana ridibunda* With Observations on Changes Occurring Under Different Conditions

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Abstract: The frogs used in this study were divided into three groups. The first group consisted of frogs collected from their natural habitat, and these animals were dissected immediately. The bodies of the frogs in the second group were totally submerged in water at +4 °C, and the third group of frogs was kept in a dry environment. The lung sections were examined under a light microscope after being stained. The lungs were found to have three folds: the primary, secondary and tertiary septa. Goblet cells were not only found among the ciliated cells but were also seen among pneumocytes. In particular, the goblet cells found among the pneumocytes were seen to form "mucous doors". The pneumocytes and goblet cells in the second group of animals were characterized by coarse granular areas in dark-stained nuclei, and the cytoplasm of the goblet and neuroepithelial endocrine cells also contained numerous scattered secretory granules. The pneumocyte nuclei in the third group of animals were lightly stained and possessed large nucleoli. The goblet and neuroepithelial endocrine cells of this group exhibited different stages of secretion and production. Therefore, this implies that the third group of frogs used their lungs during respiration, but a dry environment was not suitable for their survival. In contrast, the second group of frogs were in hibernation and did not use their lungs.

Key Words: lungs, respiratory epithelium, neuroepithelial endocrine cells, neuroepithelial bodies, frog, *Rana ridibunda*.

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