

Abstract Submitted
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Liquid-feeding strategy of the proboscis of butterflies¹ SEUNG CHUL LEE, SANG JOON LEE, Pohang Univ of Sci & Tech, CENTER FOR BIOFLUID AND BIOMIMIC RESEARCH TEAM — The liquid-feeding strategy of the proboscis of butterflies was experimentally investigated. Firstly, the liquid uptake from a pool by the proboscis of a nectar-feeding butterfly, cabbage white (*Pieris rapae*) was tested. Liquid-intake flow phenomenon at the submerged proboscis was visualized by micro-particle image velocimetry. The periodic liquid-feeding flow is induced by the systaltic motion of the cibarial pump. Reynolds number and Womersley number of the liquid-intake flow in the proboscis are low enough to assume quasi-steady laminar flow. Next, the liquid feeding from wet surfaces by the brush-tipped proboscis of a nymphalid butterfly, Asian comma (*Polygonia c-aureum*) was investigated. The tip of the proboscis was observed especially brush-like sensilla styloconica. The liquid-feeding flow between the proboscis and wet surfaces was also quantitatively visualized. During liquid drinking from the wet surface, the sensilla styloconica enhance liquid uptake rate with accumulation of liquid.

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