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Investigation of the Locomotory Behaviours of Water Striders (Gerrini)

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Abstract

Though the locomotion of water striders of tribe gerrini has been extensively studied, many if not all of these studies focus on the mechanical and physical aspects of the water strider's ability to reside and locomote atop the surface film of water bodies, and do not investigate the functionality and behavioral aspects of its locomotion. This study utilizes existing knowledge on the mechanics of water strider locomotion to build a more comprehensive understanding of the locomotory behaviors of water striders belonging to tribe gerrini. Observations were made on a population of water striders in a freshwater pond in Homagama, Western Province, Sri Lanka. Initial observations were made ad-libitum with the naked eye, and further observations were made by analyzing photographs and slow-motion videos. Through such analysis, two novel locomotory behaviors were identified: diagonal gliding, and reverse gliding and reorientation. These behaviors, both of which are comparatively complex and consist of several distinct movements, were observed to be utilized as the water strider navigated confined spaces. Furthermore, locomotory behavioral responses to extrinsic stimuli, specifically escape behaviors in response to potential threats (significant disturbances atop the water surface) were observed, and it was noted that water striders nominally responded to such stimuli with rapid successive gliding or leaping movements, the dynamics of which appear to be as described in existing literature. It is also notable that the water striders under study were habituated to the presence of freshwater fish, as well as humans who were regularly in proximity to the study site.

Keywords: Water strider Locomotion, Gerrini