

**A105 Taxonomic Study of Panorpidae(Mecoptera)
in Korea**

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The family Panorpidae comprises about 150 described species referred to four genera throughout the world. In Korea, 9 species in 2 genera(*Panorpa*, *Panorpoidea*) including 1 endemic species, which were mostly described by Okamoto(1925), have been known to date. From the result of this study, based on external morphology(male appendage, abdominal structure, wing venation, wing marking, etc.) of collected specimens, 11 species of Panorpidae including 2 undescribed species are recognized from Korea. Descriptions and a key to the Korean species of Panorpidae including 2 undescribed species are provided, with illustrations and photographs of male appendages and wing venations.

A106 Evolution of sexually dimorphic traits in male freshwater gobies, *Rhinogobius brunneus* (Pisces: Gobiidae): mate attraction and male-male competition

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Male freshwater gobies in Korea, *Rhinogobius brunneus*, are larger in total body length and head width, and have the first dorsal fin that is considerably longer and more elaborate in color and structure than that of females. To determine how these dimorphic traits affect reproductive performance and success, we conducted mate choice and mate competition test. In 30 trials of female choice test where females were given a choice between a pair of males, they mated randomly with respect to head width or total body length but showed a marked preference for males with a longer first dorsal fin. In 50 trials of male-male competition test we used a basic ethological technique of letting individuals interact with one another while conditions of residency and recent experience were held constant. Males with longer first dorsal fins had no advantage in mate competition. Instead, the outcomes of male-male competition were determined largely by the following parameters: the total body length, head width, and body weight. *Rhinogobius brunneus* males seem to estimate the body length of an opponent visually during the first phase of their aggressive display such as lateral display. Head width and body weight may play important roles during more escalated contacts such as mouth wrestling and charge. Test results indicate that the two components of sexual selection (inter- and intrasexual selection) may influence the evolution of different male morphological traits in freshwater gobies. Mate competition may have selected for increased male body size and head size, while the long first dorsal fin may have evolved through the process of intersexual selection.