Positive and negative phototaxis in marbled crayfish *Procambarus fallax*

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Taxes, kineses and chains of reflex are essential elements of innate behaviour. Taxes are behavioural acts towards or away from a stimulus source. Many terrestrial arthropods are well known to show positive or negative phototaxis, however, few studies have addressed phototaxis in aquatic crustaceans with the exception of some larvae or planktons. Marbled crayfish, *Procambarus fallax,* are parthenogenetic and highly active crustaceans. We analyzed their responses to light stimuli using a T-maze.

Experimental trials were carried out in a dimly red-lit dark room. Crayfish were allowed to settle in the gate of a T-maze for at least 5 min, and then released when a white light near either the right or left exit was illuminated. Crayfish reared under a 12h-12d light period (LD) before an experiment preferred to choose the opposite exit with light illumination, though they chose either the right or left exit randomly when they were released without light stimulus. When they were reared under constant dark condition (DD), they preferred to choose the exit with light illumination. This transition of preference began within 48 hours and completely reversed after 6 days from LD to DD condition and vice versa.