

Acoustic behavior of captive Commerson's dolphins. "Echolocation?
Communication?"

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Commerson's dolphins (*Cephalorhynchus commersonii*) produce only ultrasonic pulse sounds and no whistles. Although they have been suggested to use pulse sounds not only for echolocation but also for communication, variation and function of their pulse sounds are still unclear. We analyzed the sounds and behavior of 4 captive Commerson's dolphins in Toba aquarium in Japan to clarify the variation and function of their sound. Their pulse sounds could be categorized into 4 types (Decreasing-type, Increasing-type, Fluctuation-type and Burst-type) based on the difference in the changing pattern of inter-pulse interval (IPI) in the pulse train. Decreasing-type and Fluctuation-type showed the pattern of IPI variation characteristic to the sounds for echolocation reported by other delphinid species. Decreasing-type was observed 7 times more frequently than usual level when they approached to an object newly introduced to the pool, supporting this view. In contrast, Burst-type was recorded 19 times more frequently when they came in front of the object. When they emitted the Burst-type, the dolphin often bended the neck to the object (86%). Increasing-type was recorded 4 times more frequently just before parallel swimming and flipper rapping. These results suggest Burst-type and Increasing-type have some function other than echolocation.