Observations of wild hunting behavior and bioluminescence of a large deep-sea, eight-armed squid, *Taningia danae* (Abstract)

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Our newly developed underwater high definition video camera system took the first live images of adults of the mesopelagic large squid, *Taningia danae*, between 240-940 m deep off Ogasawara Islands, western North Pacific. The resulting footage includes attacking and bioluminescence behaviors and reveals that *T. danae* is far from the sluggish neutrally buoyant deep-sea squid previously suspected. It can actively swim both forward and backward freely by flapping its large muscular triangular fins and turning directions quickly through bending its flexible body. It can attain speeds of 2-2.5 m/sec. (7.2 -9 km/hour) when attacking bait rigs. They emitted short bright light flashes from their large arm-tip photophores before final assault, which might act as a blinding flash for prey as well as a means of measuring target distance in a dark deep-sea environment. They also emitted long and short glows with intervals while prying around the double torch lights attached to the bait rig, suggestive of potential courtship behaviors during mating.

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