

Japanese Pygmy Squid *Idiosepius paradoxus*: Its Life History and Potential as a Model for Cephalopod Research, Exhibition, and Education.

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The pygmy squid, genus *Idiosepius*, is the smallest living cephalopod inhabiting coastal beds of seagrass and algae in the Indo-West Pacific region from South Africa to Japan and southern Australia. *Idiosepius paradoxus*, Japanese pygmy squid, is distributed in the northern areas such as Japan. In the *Zostera* beds of the temperate coast of central Honshu, Japan, *I. paradoxus* have at least two generations within one year, namely, the small-sized summer spawning generation and the large-sized spring spawning generation.

The Japanese pygmy squid is an ideal model not only for cephalopod researches but also for exhibition and education purposes. They are collectable in abundance with a small drag net in the eelgrass beds throughout the year and are tolerant to long transportation. The adults can be maintained in a small tank, which makes various behaviours visible. For example, their unique behaviors such as using ink for predation and external digestion as well as copulation and camouflage are often observable in captivity. They also have a unique habit of attaching the dorsal mantle to the eelgrass by means of an organ secreting an adhesion substrate and laying eggs on the surface of eelgrass or even aquarium walls, from which many fertilized eggs can be constantly collected. A single individual lays up to 2000 eggs over a 70 days period in captivity. The eggs and egg capsules are transparent and can be reared in a shallow glass dish, which enables us to observe the embryonic development under the microscope.

The cephalopods exhibit not only numerous unique behaviors but also a unique body plan, both of which have been intensely investigated by researchers majoring in embryonic and post-embryonic development, neurobiology, physiology, and life history. *I. paradoxus* is an ideal, attractive model species for exhibition and education of such research outcomes in the aquariums.