

琉球大学学術リポジトリ

Sexual Reproduction of *Millepora intricata* and *Millepora tenella* (Hydrozoa : Milleporidae)

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Sexual Reproduction of *Millepora intricata*
and *Millepora tenella*
(Hydrozoa: Milleporidae)

A THESIS SUBMITTED TO THE GRADUATE SCHOOL OF THE
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BY

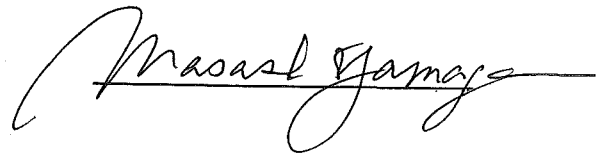
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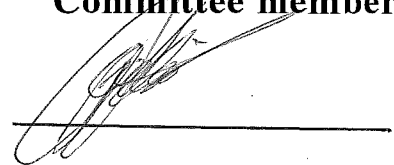
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ABSTRACT

The hydrozoan coral *Millepora* develops medusa inside a receptacle called an 'ampulla' for sexual reproduction. Little attention has been paid to the sexual reproduction of *Millepora* compared to scleractinian corals. This study is aimed to trace the developmental processes of medusae and ampullae throughout one year.

Regular sampling of *Millepora intricata* and *Millepora tenella* was conducted for histological examination of the oogenesis and spermatogenesis between October 1996 and October 1997 at Sesoko Island, Okinawa (26°38'N, 127°52'E). Medusae released from *M. intricata* at Mizugama, on the west coast of Okinawa Island, were also examined.

Ampullae were observed in *M. intricata* from May to July in 1997, *M. tenella* ampullae were observed only in May of the same year. In both *M. intricata* and *M. tenella*, it took approximately 25 days from the earliest developmental stage to mature medusa release. *M. intricata* seemed to release medusae in the last quarter of the lunar cycle. Simple medusa indicates their incapability to catch prey. Nematocysts on the umbrella may be used for protecting gametes from predators, but are unlikely used to capture prey given such a short life-span.

Coincidental developmental stages among the colonies of each species indicates synchronous medusae release. Synchronous release of medusae among colonies appears to be necessary in *Millepora* because short-lived male and female medusae are released from separate colonies.

摘要

ヒドロサンゴであるミレポラ属は、有性生殖のために、アンブラと呼ばれる子嚢の中にクラゲを作る。イシサンゴ類の生殖に関する情報が大変増えてきたことに比べ、ミレポラ属の生殖に関してはほとんど知られていない。本研究ではクラゲとアンブラの発達を一年間通して観察した。

Millepora intricata と *Millepora tenella* の2種を、1996年10月から翌年の1997年10月にかけて、沖縄県瀬底島（26°38'N, 127°52'E）において定期的にサンプリングし、組織学的研究によって卵形成と精子形成を観察した。また、沖縄県の西海岸に位置する水釜から採集した *M. intricata* から放出されたクラゲも調べた。

アンブラは *M. intricata* では1997年の5月から7月、*M. tenella* では同年の5月のみ観察された。*M. intricata* と *M. tenella* の両種で、観察されたクラゲの発達の一番初期の段階から、クラゲの放出まで約25日間かかった。*M. intricata* は下弦の月から、新月にかけてクラゲの放出をしているようだ。放出されたクラゲの単純な形態は、餌を捕る能力に欠けていることを示している。クラゲが持つたくさん刺胞は、配偶子を敵から守るために役立つかも知れない。

コロニー間で、クラゲの発達の段階が同調していることは、クラゲの放出が同時に起こっているであろうことを示している。雌雄異株のコロニーから短命のクラゲを放出するミレポラ属にとって、クラゲの放出をコロニー間で同時に行うことは、有性生殖の成功のためにも必要であろう。

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