

琉球大学学術リポジトリ

長膜亜目スナギンチャク類における分子系統、分類
および進化に関する研究

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令和 3年 2月 10日

琉球大学大学院
理工学研究科長 殿

論文審査委員

主査 氏名 James Davis REIMER 印

副査 氏名 成瀬 貫 印

副査 氏名 戸田 守 印



学位（博士）論文審査及び最終試験の終了報告書

学位（博士）の申請に対し、学位論文の審査及び最終試験を終了したので、下記のとおり報告します。

記

申請者	専攻名 海洋環境学 氏名 喜瀬 浩輝 [REDACTED] [REDACTED]		
指導教員名	James Davis REIMER		
成績評価	学位論文 <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格	最終試験 <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格	
論文題目	Molecular phylogeny, taxonomy and the evolution of macrocnemic zoantharians (長膜亜目スナギンチャク類における分子系統、分類および進化に関する研究)		
審査要旨 (2000字以内)			
<p>The order Zoantharia (Cnidaria: Anthozoa) is distributed worldwide, with many species, particularly in the suborder Macrocnemina, having symbiotic relationships with host benthos. However, the role symbioses have played in the diversification and evolution of zoantharians remains little examined, particularly with regards to many recently described families and genera. In his thesis the candidate aimed to fill this gap with a large phylogenetic dataset combined with ecological information.</p> <p>In the first section, he explored the diversity, taxonomy, and evolution of the family Epizoanthidae, with results suggesting host-specificity has some but not ultimate utility in taxonomy, with many cases of host switching.</p>			

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審査要旨

In the second section, the candidate examined the evolution of symbioses in the family Hydrozoanthidae. The candidate showed that structural differences between the zoantharian and its host may indicate differences between obligate and facultative symbioses.

In the third section, the candidate examined the evolution of symbioses in the family Parazoanthidae, specifically focusing on species associated with antipatharians and glass sponges. His results showed that these glass sponge symbioses have independently arisen several times across the evolutionary history of zoantharians.

Finally, in the fourth section of his thesis, the candidate performed order-level analyses, showing that host switching may affect zoantharian species' form, and that macrocnemic zoantharians have evolved and diversified via this switching. It should be noted that several species of zoantharians were also formally described during the course of the candidate's study.

These results are significant and of academic importance for our understanding of marine invertebrate biodiversity and evolution, as such studies have been performed to date on only very few taxa, and more examples are needed from understudied groups such as Zoantharia. The candidate's work can therefore be judged as being of a high academic level.

The candidate's publication history related to this thesis exceeds thesis requirements, with five first author papers, all in peer-reviewed international journals. The candidate gave a final thesis presentation (=final examination) on February 9, 2021, online via Zoom software, from 13:10 to 14:10 in front of all three members of the Committee. This presentation was open to the public, and attended by many people from both inside and outside the university. In his presentation he discussed his major findings and conclusions. Overall, the candidate talked for 40 minutes, and then appropriately answered numerous questions related to his thesis and research field for 20 minutes. The Committee then met on February 10, 2021, at 16:30, and discussed and judged the candidate's thesis, and his final presentation and answers to questions, as demonstrating his hard work, results, and knowledge. Thus, based on the above results, for these reasons, the Committee unanimously recommended "Pass" for the candidate.