

# 琉球大学学術リポジトリ

## アデヤカイロウミウシ属の分類、多様性に関する研究

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(様式第5-2号) 課程博士

2022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

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### 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 SOONG GIUN YEE 学籍番号 [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	Diversity and taxonomy of <i>Goniobranchus nudibranchs</i> (アデヤカイロウミウシ属の分類、多様性に関する研究)		
審査要旨 (2000字以内)	<p>The nudibranch genus <i>Goniobranchus</i> is a highly speciose group, with &gt;50 described species, and found in coral reef and shallow water regions of the Indo-Pacific Ocean. Despite being colorful and popular as diving attractions and the subject of many identification guides, research on this genus' diversity has lagged compared to that of many other nudibranch genera, and much taxonomic confusion has surrounded the genus. In her thesis, the candidate aimed to fill as much of this critical data gap as she could, while combining molecular and morphological analyses, with the goal of stabilizing the taxonomy of the genus.</p>		

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### 審查要旨

The candidate collected specimens via field surveys and from museum collections, and amplified two to three molecular markers to conduct phylogenetic analyses, while also examining aspects of specimens external and internal morphologies. Specifically, the candidate examined various species groups within *Goniobranchus* in chapters two and three. Her results showed that identification of *Goniobranchus* based solely on external coloration and morphology may not be accurate, and her results showed that some species encompass more than one morphotype, while other morphotypes represent previously unrecognized species. On the other hand, molecular data combined with external morphotype, internal morphology, and distribution can result in far more accurate species delineation. During the course of her study, the candidate also formally described one species of nudibranch, *G. fabulus*.

In the largest molecular analyses of her thesis, the candidate combined analyses of over 320 specimens to make a large phylogenetic tree, finding ten species complexes, recovering 57 valid described species, and identifying 27 potentially undescribed species, while filling in a large portion of the data gaps for the genus *Goniobranchus*. In her summary, the candidate clearly addresses the remaining data gaps, and points towards needed future research, displaying a command of her field of expertise and critical thinking.

These results are significant and of academic importance as our understanding of nudibranchs in coral reef marine environments have been limited to very few taxa, and more examples are needed from understudied groups such as the genus *Goniobranchus*. The candidate's work can therefore be judged as being of a high academic level and representing a significant body of work.

The candidate's publication history related to this thesis meet graduation requirements, with two first author papers in peer-reviewed international journals. The candidate gave a final thesis presentation (=final examination) on February 8, 2022, online via Zoom software, from 10:40 to 11:40 a.m. 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, including from India, the United States, and Philippines, and Malaysia. In her presentation she discussed her major results. Overall, the candidate talked for 45 minutes, and then appropriately answered numerous questions related to her thesis and research field for 15 minutes. The Committee then met on February 10, 2022, at 13:30, and discussed and judged the candidate's thesis, and her final presentation and answers to questions, as demonstrating her hard work, results, and knowledge. Thus, based on the above results, for these reasons, the Committee unanimously recommended "Pass" for the candidate.