

琉球大学学術リポジトリ

沖縄島の砂浜における間隙性の生物指標（端脚類および等脚目）に関する研究

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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 Mottaghi Arezoo ■■■■■ ■■■■■	
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	Studies on interstitial biological indicators (amphipods and isopods) in sandy beaches of Okinawa Island (沖縄島の砂浜における間隙性の生物指標（端脚類および等脚目）に関する研究)	
審査要旨（2000字以内） Although there are many artificial swimming beaches on the coasts of Okinawa Island, Japan, the effects of their construction on marine organisms have been poorly known. In her thesis the candidate aimed to utilize amphipods and isopods as bioindicators and examine their potential in assessing the impact of artificial and disturbed beaches on Okinawa-jima Island, Japan. In Chapter 2, she explored amphipod and isopod diversity across three pairs of artificial and disturbed beaches with paired control natural beaches. In Chapter 3, the candidate examined the amphipod and isopod diversity again, this time including more comparatively degraded and pristine sites, and including DNA barcoding of collected amphipods to better assess their diversity and provide a baseline		

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審査要旨

for future work. Finally, in Chapter 4, the candidate showed that isopods in interstitial environments are most common in spring at beaches in Okinawa. The candidate showed a consistent decreased biodiversity at artificial or degraded sites when compared with natural control sites. Furthermore, based on her results, the candidate recommended spring as potentially the best time of year to conduct such monitoring. Finally, although she collected several environmental parameter datasets (temperature, pH, dissolved oxygen, ammonia, nitrate and nitrite concentrations, etc.), as well anthropogenic information (numbers of visitors to beaches, amount of garbage at beaches), only ammonia was judged as a potential factor correlated with a decrease in amphipod and isopod diversity. Thus, the candidate recommends continued further research is needed to make final conclusions on the utility of amphipods and isopods in assessing the impacts of artificial beaches in Okinawa.

These results are of academic importance as our understanding of the impacts of artificial beaches on marine organisms has been very limited until now, particularly in Okinawa, and such research is needed to understand how coastal development may negatively influence marine communities. The candidate's work can therefore be judged as being of a satisfactory academic level.

The candidate's publication history related to this thesis meets graduation requirements, with three first author peer-reviewed papers, two of them in international journals. The candidate gave a final thesis presentation (=final examination) on August 9, 2019, in the Science Collaborative Building Room 102, from 10:00 to 11:00 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 her presentation she discussed her major results. Overall, the candidate talked for 43 minutes, and then appropriately answered numerous questions related to her thesis and research field for 17 minutes. The Committee then met on August 9, 2019, from 11:15 to 12 noon, and discussed and judged the candidate's thesis, and her final presentation and answers to questions, as meeting graduation requirements. Thus, based on the above results, for these reasons, the Committee unanimously recommended "Pass" for the candidate.