

**PALATABILITY AND CHEMICAL DEFENCES OF DEMOSPONGES FROM THE ANTARCTIC PENINSULA**

K.J. Peters<sup>1</sup>, C.D. Amsler<sup>1</sup>, J.B. McClintock<sup>1</sup>, B.J. Baker<sup>2</sup>

<sup>1</sup>Department of Biology, University of Alabama at Birmingham, Birmingham, AL, United States, <sup>2</sup>Department of Chemistry, University of South Florida, Tampa, FL, United States

One of the major benthic taxa in terms of biomass along the western side of the Antarctic Peninsula is Demospongiae. These sponges, which are primarily found at depths greater than 30 meters, are predominantly preyed upon by spongivorous and omnivorous sea stars with the most abundant sea star in our study area being the omnivorous sea star, *Odontaster validus*. In the current study, demosponges were collected from the shallow waters (<40 meters) around Anvers Island, Antarctica. Out of the 51 sponge species collected, 33 (65%) were collected in great enough numbers to have at least three replicates available for fresh tissue feeding bioassays. The fresh outer tissue from 22 of the 33 (67%) sponge species was rejected when presented to *O. validus*. Of these sponges, 8 (36%) had fresh inner tissue not significantly rejected by *O. validus*. These 36% appear to have sequestered defences in their outer layers where they are more susceptible to being preyed upon. Crude organic extracts were made of the species that elicited any rejection when fed to *O. validus*. The extracts from 13 unpalatable species were used in feeding assays and the lipophilic and/or hydrophilic extract was rejected in all of them. This provides evidence that chemical defences are an explanation for all of the unpalatability observed in the present study. This research was supported by National Science Foundation awards to CDA and JBM (OPP-0125181) and to BJB (OPP-0125152).