PRESS RELEASE
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Revealing Hidden Diversity: New Study Unveils Little-Known Bivalves of Western South Africa

SANTA BARBARA, CA— A groundbreaking new study has shed light on the remarkable diversity of galeommatoidean bivalves, a little-known group of marine mollusks, from the western coast of South Africa. The research, led by Paul Valentich-Scott from the Santa Barbara Museum of Natural History, along with collaborators from South Africa and the United States, offers unprecedented insights into the habitats, symbiotic relationships, and taxonomy of these fascinating creatures.

Published in the scientific journal *ZooKeys*, the study, titled "Bivalves of superfamily Galeommatoidea (Mollusca, Bivalvia) from western South Africa, with observations on commensal relationships and habitats," highlights the discovery of four distinct species of galeommatoidean bivalves collected from the Western Cape region of South Africa. Among these, a new species, *Brachiomya ducentiunus*, is described for the first time. This small clam, which is only 2 mm (less than 1/8th inch) in length, spends its life crawling between the spines of sea urchins.

The superfamily Galeommatoidea, known for their small size and cryptic lifestyles, has long intrigued scientists due to their diverse and often specialized symbiotic relationships with various marine invertebrates. This study not only provides detailed descriptions and illustrations of the four species but also offers new insights into their habitat preferences and symbiotic associations.

Key findings of the study include:

- **Discovery of a New Species**: The identification and description of a new species, *Brachiomya ducentiunus*, which exhibits an obligate symbiotic relationship with the burrowing sea urchin *Spatagobrissus mirabilis*.
- **Symbiotic Relationships**: Detailed observations of the symbiotic relationships between the studied bivalves and their invertebrate hosts, including *Montacuta substriata*'s association with the heart urchin *Spatangus capensis*. Two species studied, *Kellia becki* and *Melliteryx mactroides*, had no discernable symbiotic host.
- **Habitat Preferences**: Comprehensive details of the habitats of the studied species, ranging from intertidal zones to depths of 122 meters, highlighting the ecological diversity of galeommatoidean bivalves.
- **Phylogenetic Analyses**: The inclusion of DNA data and phylogenetic analyses for three of the species, providing a deeper understanding of their evolutionary relationships.

"This study marks a significant advancement in our understanding of the biodiversity and ecological interactions of galeommatoidean bivalves," said lead author Paul Valentich-Scott. "By uncovering the

hidden lives of these small but ecologically important organisms, we hope to contribute to the broader knowledge of marine biodiversity and the conservation of these unique habitats."

The research team comprised experts from the Santa Barbara Museum of Natural History, University of Cape Town, Sea Change Trust, Stellenbosch University, and the University of Colorado Boulder. The collaborative effort underscores the importance of international cooperation in advancing scientific knowledge and conservation efforts.

Co-author Charles L. Griffiths, Emeritus Professor at the University of Cape Town, said, “A large proportion of smaller marine invertebrates remain undescribed in western South Africa and almost any project that samples specialized habitats turns up many new records and species.”

In a similar vein, co-author Jannes Landschoff, marine biologist at the Sea Change Trust, said “Creating foundational biodiversity knowledge is a most important step to the humbling realization of how fascinating and uniquely diverse a place is. I see this every day through our work in the rich coastal waters of Cape Town where an extensive underwater kelp forest, the ‘Great African Seaforest’ grows.”

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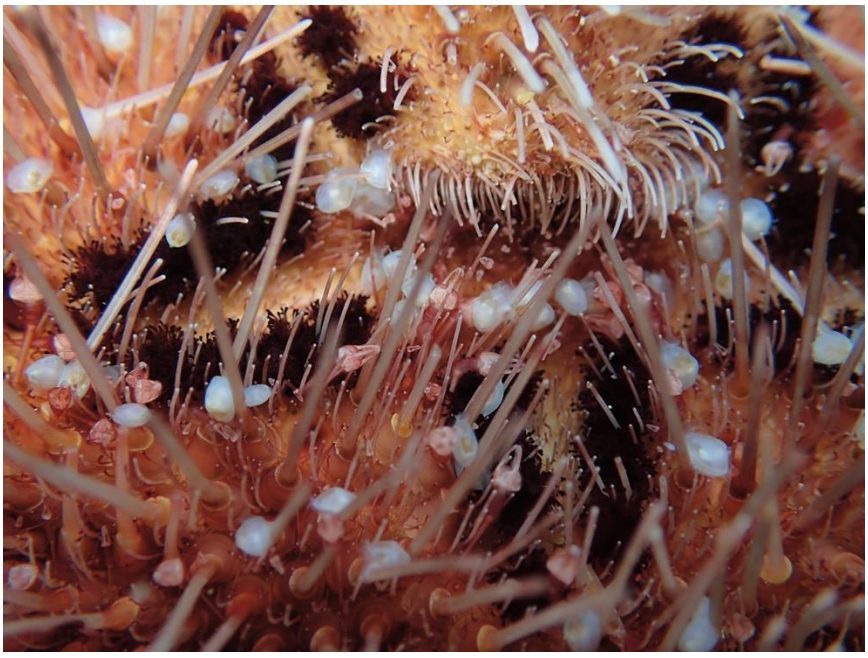
About the Santa Barbara Museum of Natural History

Inspiring curiosity for over 100 years. Founded in 1916, the Santa Barbara Museum of Natural History inspires a thirst for discovery and a passion for the natural world. The Museum seeks to connect people to nature for the betterment of both, and prides itself on being *naturally different*. For more information, visit sbnature.org.

About *ZooKeys* Journal
ZooKeys is a peer-reviewed, open-access journal that publishes high-quality research on systematic zoology. The journal aims to accelerate biodiversity research and provide a platform for the description of new species and taxa. zookeys.pensoft.net/

The newly discovered species, *Brachiomya ducentiunus*, crawing on a sea urchin spine.



Dozens of the new species crawling on the surface of a sea urchin.

Video 1 caption: The new clam species feeding between the spines of a sea urchin.

Video 2 caption: An unusual galeommatid clam, *Melliteryx mactroides*, living in tidepools near Cape Town, South Africa.

SANTA BARBARA MUSEUM of NATURAL HISTORY

Links to authors

Paul Valentich-Scott: https://www.sbnature.org/collections-research/invertebrates/staff/paul-valentich-scott

Charles L. Griffiths: https://science.uct.ac.za/articles/2020-02-18-fifty-years-brine-and-biology

Jannes Landschoff: https://saveourseas.com/project-leader/jannes-landschoff/

Ruiqi Li: https://zookeys.pensoft.net/news/580

Jingchun Li: https://jingchunli.weebly.com/people.html

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