

UC Santa Barbara

Posters

Title

Curation and Digitization of California Marine Sponges

Permalink

<https://escholarship.org/uc/item/1n07p0fh>

Authors

Love, Alma Star

Seltnann, Katja C

Publication Date

2026-05-07

Curation and Digitization of California Marine Sponges

Alma S. Love, Katja C. Seltsmann

Cheadle Center for Biodiversity and Ecological Restoration, University of California Santa Barbara
almalove@ucsb.edu, seltsmann@ucsb.edu



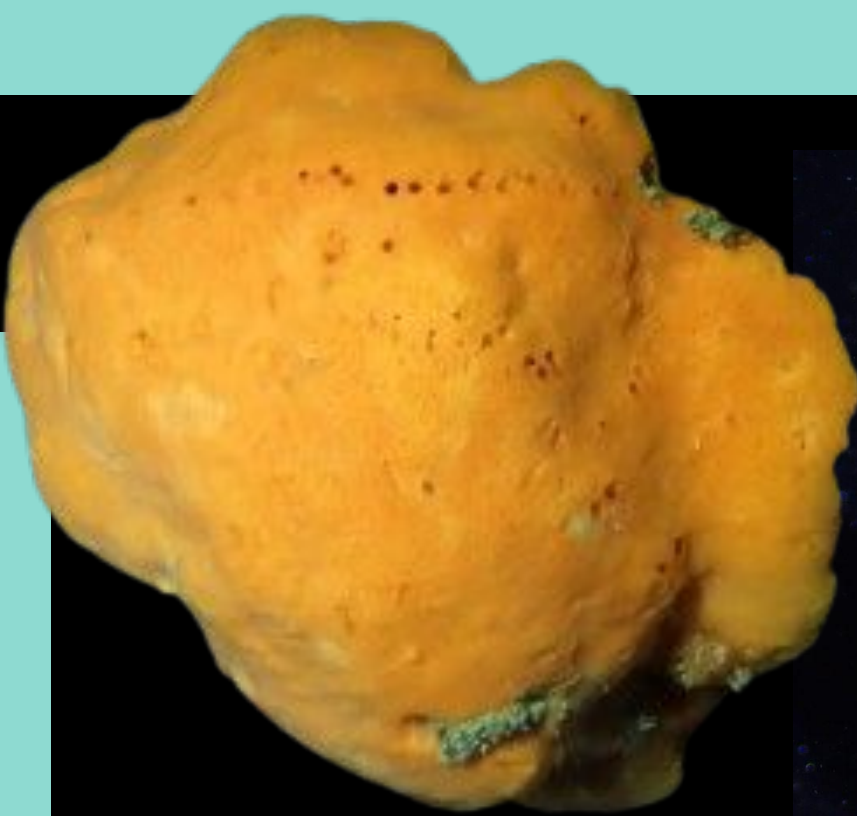
Suberites lambei

Introduction

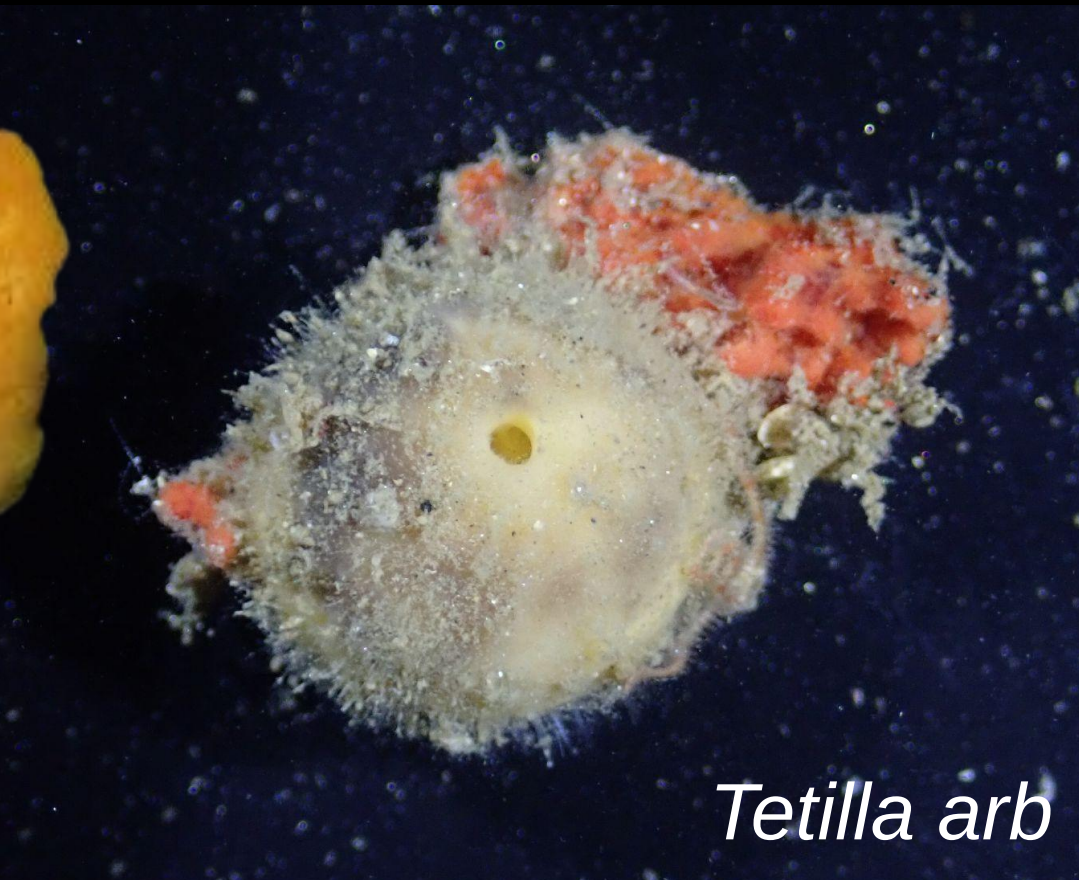
The University of California, Santa Barbara’s Cheadle Center for Biodiversity and Ecological Restoration recently obtained and accessioned approximately 50 Porifera (sea sponge) specimens, including several new species, collected in Santa Barbara County by Dr. Thomas Turner, a UCSB EEMB faculty member. Turner’s publications on these species are referenced below.¹⁻⁴ During this project, the specimens were curated and digitized, and their data were made publicly available.

Sponges

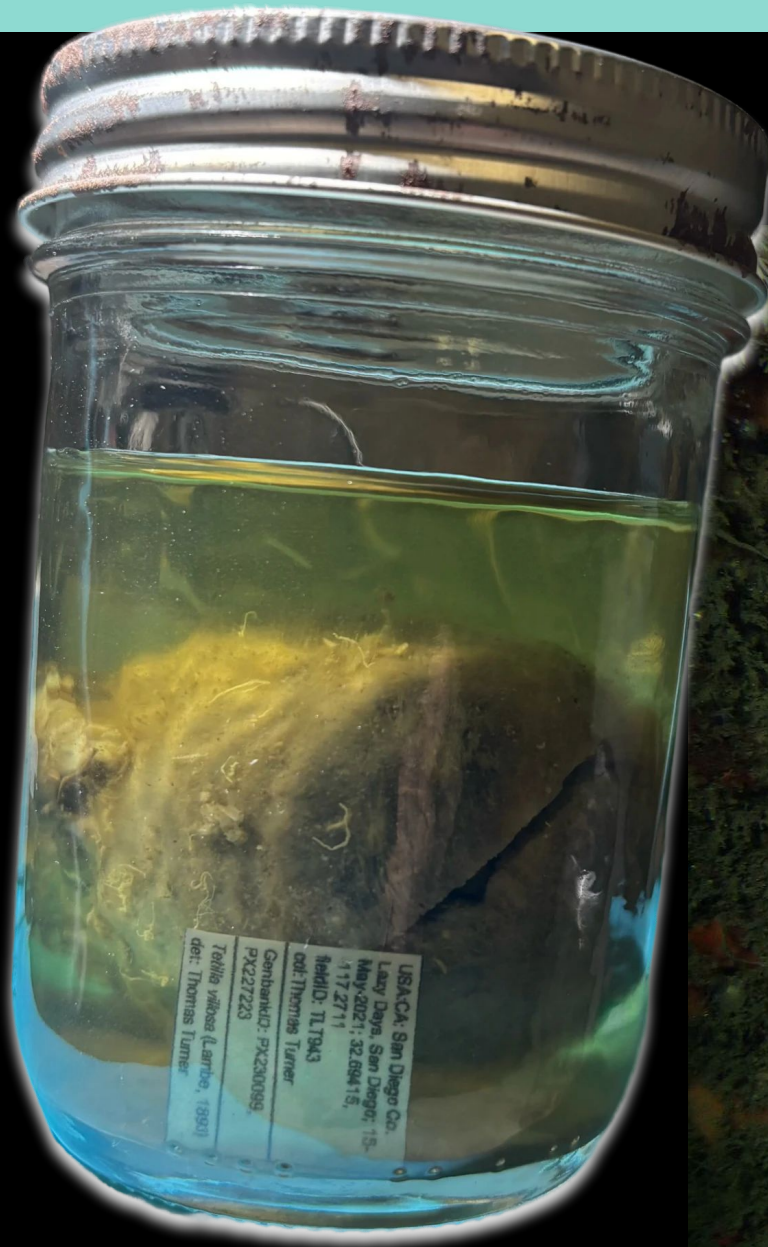
Sponges are ancient marine animals that filter seawater while living attached to rocks, reefs, kelp, and other surfaces. As they pump water through their bodies, they capture bacteria and tiny organic particles and help process carbon, nitrogen, phosphorus, and silica. They also create habitat for small invertebrates and fish, and many produce chemical compounds with biomedical importance.⁵



Megaciella sanctuarium



Tetilla arb



Tetilla villosa



Digitization Process

1. Occurrence records and images uploaded to the UCSB Invertebrate Zoology Collection Symbiota database
2. Taxonomy for new species added to the database
3. GenBank genetic sequence linked to digital specimen record
4. Images of living sponges linked to each record
5. Completed records published via the Global Biodiversity Information Faculty (GBIF) in Darwin Core Archive exchange format

Accession Process

1. Added catalog numbers to physical specimens
2. Linked physical specimens to database records
3. Added occurrence-data labels to the inside and outside of each jar



Endectyon hyle

Importance of Sponge Data

Although the sponge collection at UCSB is new and relatively small, it is important because it connects physical voucher specimens from published literature with digital records and DNA data. Once digitized, these records become part of a much larger global dataset, increasing their value for research beyond the local collection. This integration allows researchers to study sponge diversity, biology, and evolutionary relationships more accurately, while also supporting broader investigations into climate change, marine warming, and the effects of environmental change on marine ecosystems.



Distribution of UCSB sponge collection locations

References

1. Turner, T. L., & Lonhart, S. I. (2023). The Sponges of the Carmel Pinnacles Marine Protected Area. *Zootaxa*, 5318(2), 151–194. <https://doi.org/10.11646/zootaxa.5318.2.1>
2. Turner, T. L., Morrow, C., Picton, B., Goodwin, C., & Thacker, R. W. (2024). A common garden of Halichondria sponges: taxonomic revision of Northeast Pacific Halichondriidae reveals many cryptic introduced species. *BioRxiv*. <https://doi.org/10.1101/2024.11.04.621922>
3. Turner, T. L., & Pankey, M. S. (2023). The order Axinellida (Porifera: Demospongiae) in California. *Zootaxa*, 5230(5), 501–539. <https://doi.org/10.11646/zootaxa.5230.5.1>
4. Turner, T. L., Rouse, G. W., Weigel, B. L., Janusson, C., Lemay, M. A., & Thacker, R. W. (2024). Taxonomy and phylogeny of the family Suberitidae (Porifera: Demospongiae) in California. *Zootaxa*, 5447(1), 1–28. <https://doi.org/10.11646/zootaxa.5447.1.1>
5. US Department of Commerce, National Oceanic and Atmospheric Administration. (2024, June 16). What is a sponge? Noaa.gov; NOAA. <https://oceanservice.noaa.gov/facts/sponge.html>