

# Velum sizes of *Ceraesignum* maximum larvae in lab experiment after 3, 6, 9 days depending on food level in Moorea, French Polynesia from October 2009 (Vermetids\_Corals project)

**Website:** <https://www.bco-dmo.org/dataset/725957>

**Data Type:** experimental

**Version:** 2017-10-05

## Project

» [Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences](#)  
(Vermetids\_Corals)

| Contributors                     | Affiliation   | Role                            |
|----------------------------------|---|---------------------------------|
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## Coverage

**Spatial Extent:** N:-17.47279 E:-149.78277 S:-17.48365 W:-149.84698

**Temporal Extent:** 2009-10-10 - 2009-10-19

## Dataset Description

These data are from an experiment that test the nutritional strategies of *Ceraesignum* (*Dendropoma*) maximum larvae. For additional datasets see related files.

### Related Datasets:

- Phillips\_2011 - Experiment 1 Larval Mortality: <https://www.bco-dmo.org/dataset/725276>
- Phillips\_2011 - Experiment 1 Larval Size: <https://www.bco-dmo.org/dataset/725317>
- Phillips\_2011 - Experiment 1 Settlement Challenge 10: <https://www.bco-dmo.org/dataset/725335>
- Phillips\_2011 - Experiment 1 SettlementChallenge18: <https://www.bco-dmo.org/dataset/725392>
- Phillips\_2011 - Experiment 2 Larval Mortality: <https://www.bco-dmo.org/dataset/725880>
- Phillips\_2011 - Experiment 2 Larval Size: <https://www.bco-dmo.org/dataset/725943>
- Phillips\_2011 - Experiment 2 Larval Velum Size: <https://www.bco-dmo.org/dataset/725957> (Current page)
- Phillips\_2011 - Experiment 2 Settlement Challenge 6: <https://www.bco-dmo.org/dataset/725973>
- Phillips\_2011 - Experiment 2 Settlement Challenge 8: <https://www.bco-dmo.org/dataset/726002>

## Methods & Sampling

In this experiment, larval growth and metamorphosis was tested using different food levels.

Larvae hatched on October 10, 2009 and ~50 were distributed into each tubs on 500mL filtered sea water (FSW). Because the greatest metamorphic success was in the *Isochrysis galbana* treatment during experiment 1, only that species was used in this experiment.

Three food densities were created high food ( $4 \times 10^4$  cells mL<sup>-1</sup>), low food ( $4 \times 10^3$  cells mL<sup>-1</sup>) plus an Unfed treatment in which larvae were raised in FSW. The height and width of fully extended velums on live larvae 3-, 6- and 9-day post-hatch were measured. Approximately 20 larvae from each replicate container were pipetted into small petri dishes with FSW, under a dissecting microscope. When larvae were first introduced to the dish their vela were withdrawn. After approximately 1 min, the vela were extended and the larvae began to swim. The larvae were measured when the vela was fully extended vela and the larvae were still on the bottom of the dish and in focus (i.e. before swimming). Because this was logistically challenging, numbers measured per container and per treatment varied and sample sizes were relatively low (N per food treatment = 6–20, after pooling larvae across replicate containers).

## Data Processing Description

Missing values indicate that measurement was not completed.

### BCO-DMO Processing:

- added conventional header with dataset name, PI name, version date
- modified parameter names to conform with BCO-DMO naming conventions
- empty values were replaced with 'nd' (no data).

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## Data Files

| File   |
|--|
| <b>Phillips_2011_Expt2_LarvaVelumSize.csv</b> (Comma Separated Values (.csv), 2.26 KB)<br>MD5:588df977584768dfdd1104b4b2a5eab8 |
| Primary data file for dataset ID 725957  |

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## Related Publications

Phillips, N. E. (2011). Where are larvae of the vermetid gastropod *Dendropoma maximum* on the continuum of larval nutritional strategies? Marine Biology, 158(10), 2335–2342. doi:[10.1007/s00227-011-1737-0](https://doi.org/10.1007/s00227-011-1737-0)  
*General*

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## Parameters

| Parameter               | Description                             | Units        |
|-------------------------|---|--------------|
| FOOD_LEVEL              | High (HI); Low (LO) or Unfed treatments | unitless     |
| Replicate_tub           | replicate tub number                    | unitless     |
| sample_day              | day of measurements                     | day          |
| Larva_num               | number id of larva                      | unitless     |
| velum_width_in_microns  | width of velum                          | microns (um) |
| velum_height_in_microns | height of velum                         | microns (um) |

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## Instruments

|   |   |
|---|---|
| <b>Dataset-specific Instrument Name</b> | dissecting microscope   |
| <b>Generic Instrument Name</b>          | Microscope - Optical  |
| <b>Dataset-specific Description</b>     | Approximately 20 larvae from each replicate container were pipetted into small petri dishes with FSW, under a dissecting microscope.  |
| <b>Generic Instrument Description</b>   | Instruments that generate enlarged images of samples using the phenomena of reflection and absorption of visible light. Includes conventional and inverted instruments. Also called a "light microscope". |

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## Deployments

### Osenberg\_et\_al\_Moorea

|                   |   |
|-------------------|---|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/644752">https://www.bco-dmo.org/deployment/644752</a> |
| <b>Platform</b>   | Osenberg et al Moorea   |
| <b>Start Date</b> | 2003-05-19  |
| <b>End Date</b>   | 2015-07-12  |

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## Project Information

## Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids\_Corals)

**Coverage:** Moorea, French Polynesia (-17.48 degrees S, -149.82 degrees W)

### *Description from NSF abstract:*

Ecological surprises are most likely to be manifest in diverse communities where many interactions remain uninvestigated. Coral reefs harbor much of the world's biodiversity, and recent studies by the investigators suggest that one overlooked, but potentially important, biological interaction involves vermetid gastropods. Vermetid gastropods are nonmobile, tube-building snails that feed via an extensive mucus net. Vermetids reduce coral growth by up to 80%, and coral survival by as much as 60%. Because effects vary among coral taxa, vermetids may substantially alter the structure of coral communities as well as the community of fishes and invertebrates that inhabit the coral reef.

The investigators will conduct a suite of experimental and observational studies that: 1) quantify the effects of four species of vermetids across coral species to assess if species effects and responses are concordant or idiosyncratic; 2) use meta-analysis to compare effects of vermetids relative to other coral stressors and determine the factors that influence variation in coral responses; 3) determine the role of coral commensals that inhabit the branching coral, *Pocillopora*, and evaluate how the development of the commensal assemblage modifies the deleterious effects of vermetids; 4) determine how vermetid mucus nets affect the local environment of corals and evaluate several hypotheses about proposed mechanisms; and 5) assess the long-term implications of vermetids on coral communities and the fishes and invertebrates that depend on the coral.

**Note:** The Principal Investigator, Dr. Craig W. Osenberg, was at the University of Florida at the time the NSF award was granted. Dr. Osenberg moved to the University of Georgia during the summer of 2014 ([current contact information](#)).

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## Funding

| Funding Source   | Award                       |
|--|-----------------------------|
| <a href="#">NSF Division of Ocean Sciences (NSF OCE)</a> | <a href="#">OCE-1130359</a> |

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