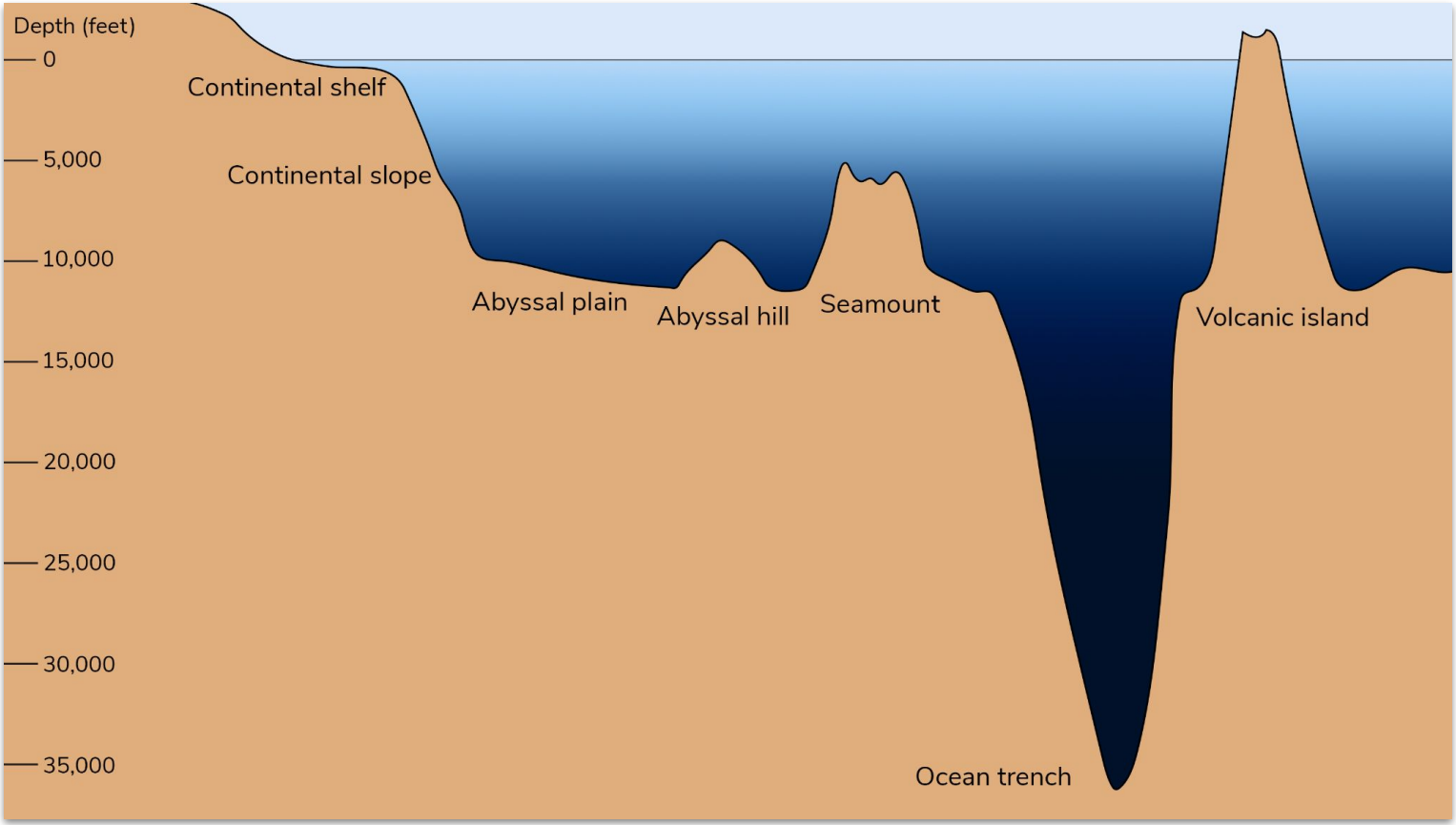
Evolution in the Deep Sea



Depth of the Ocean

Deep Sea

Agenda

Outline

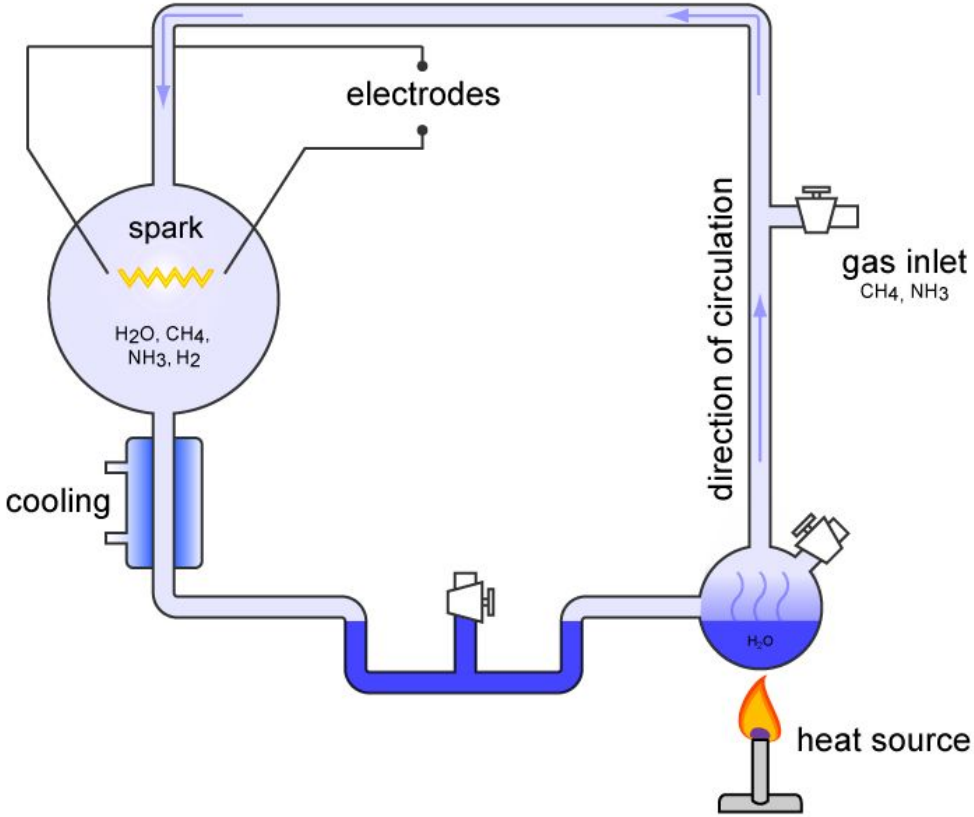
Evolution at the Dawn of Life

Evolution Today

Evolution Tomorrow?

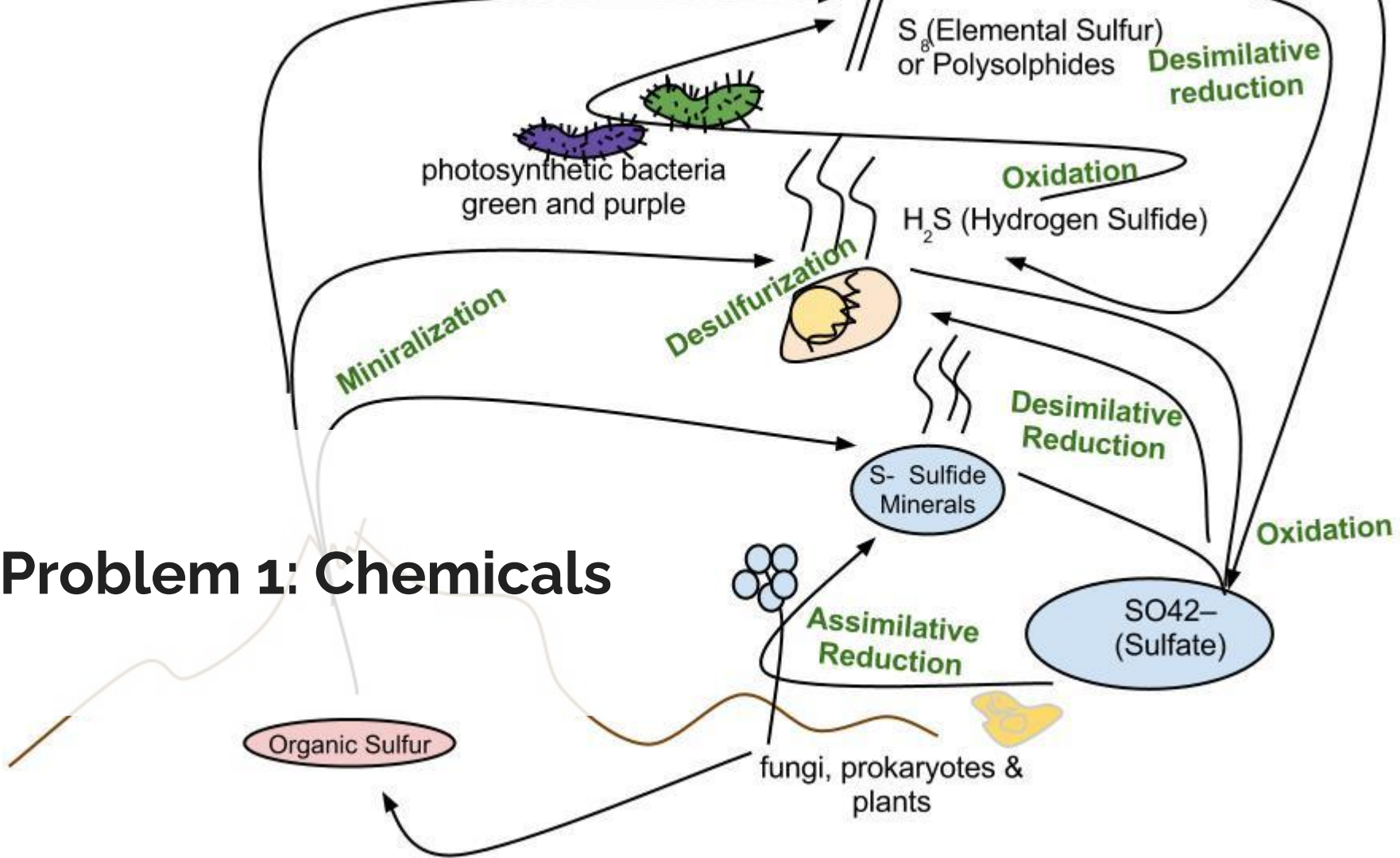
§1: The Origin of Life?

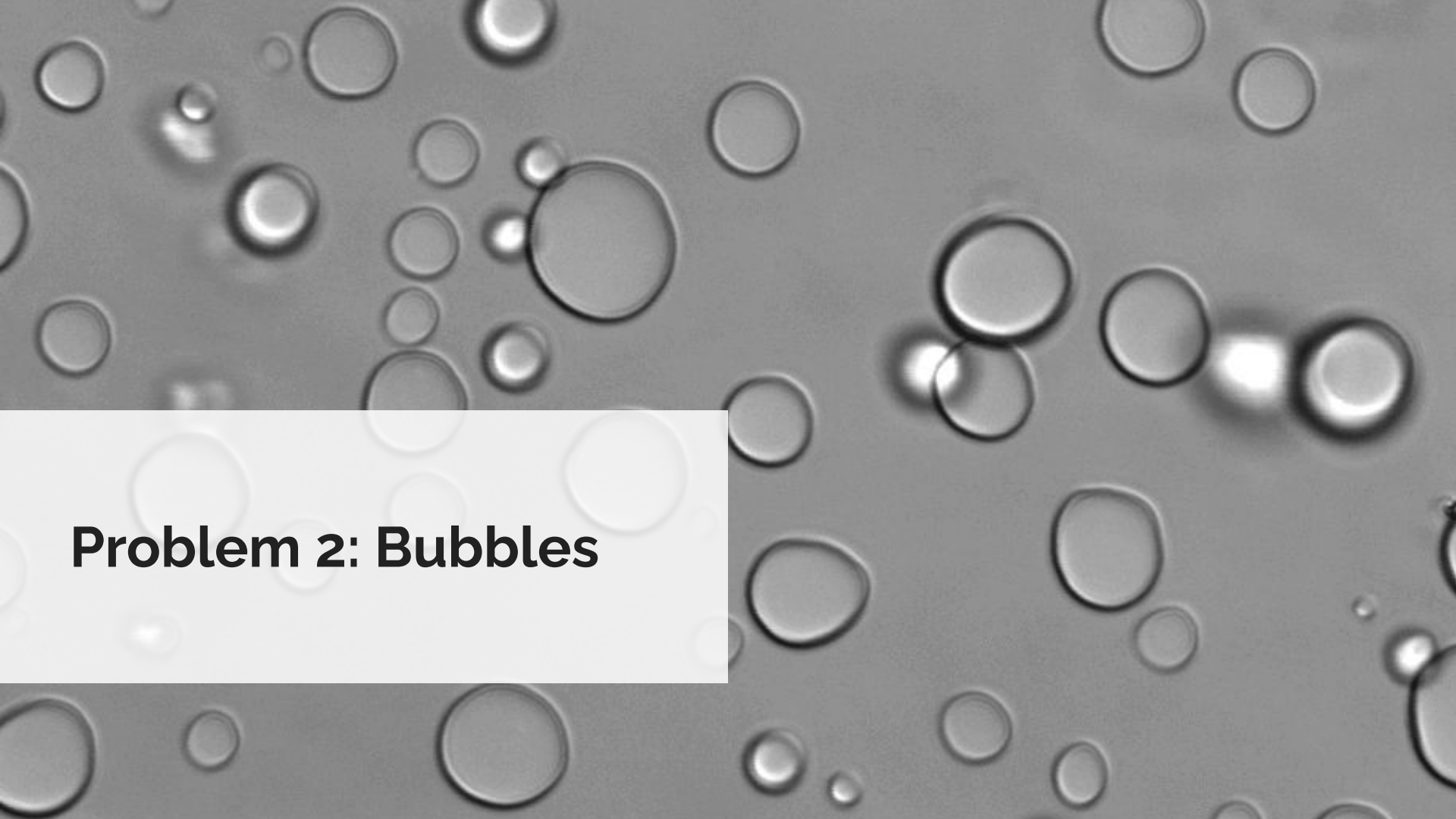
Life's Origin:
The High School Version



Miller-Urey Experiment

Problem 1: Chemicals





Problem 2: Bubbles

Problem 3: Energy

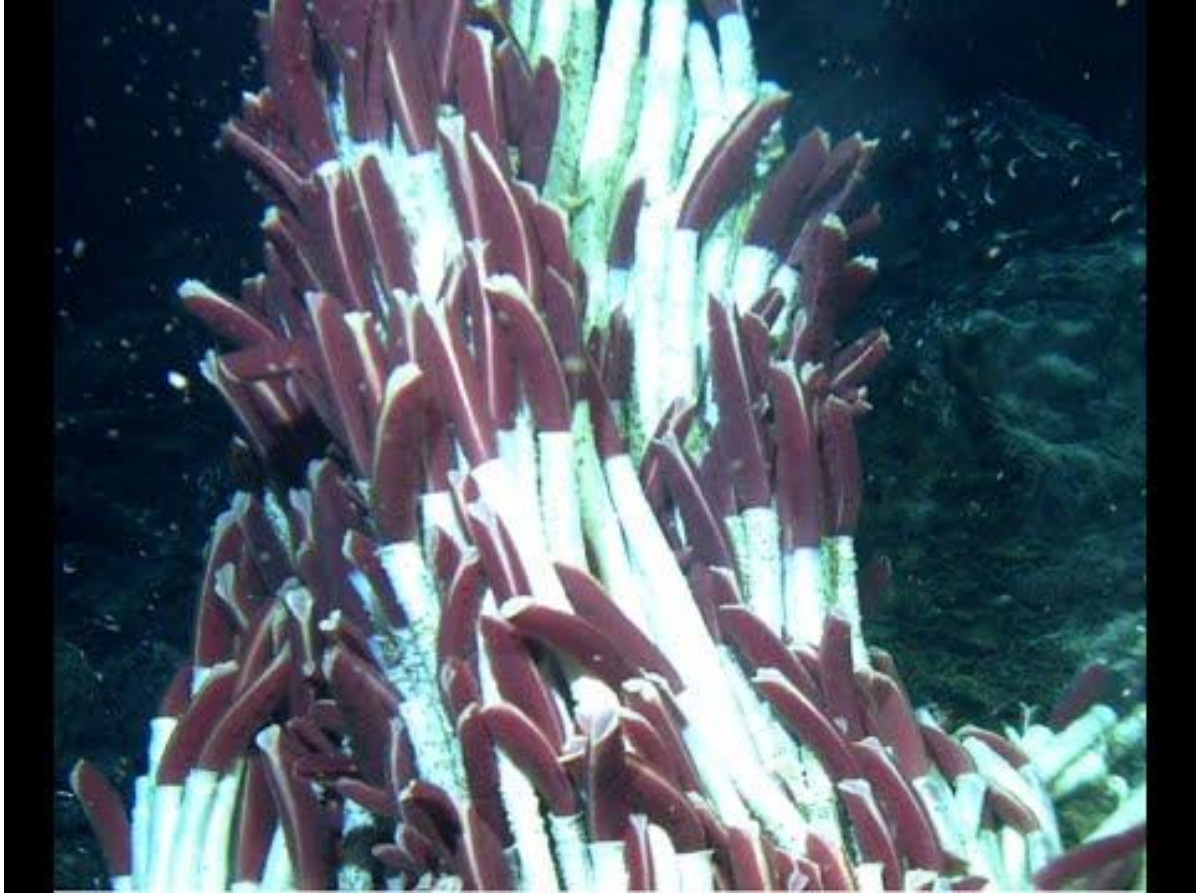
Life's Origin:
An Alternate Hypothesis

Hydrothermal Vents

Solution 1: Chemicals

Solution 2: Bubbles

Solution 3: Energy



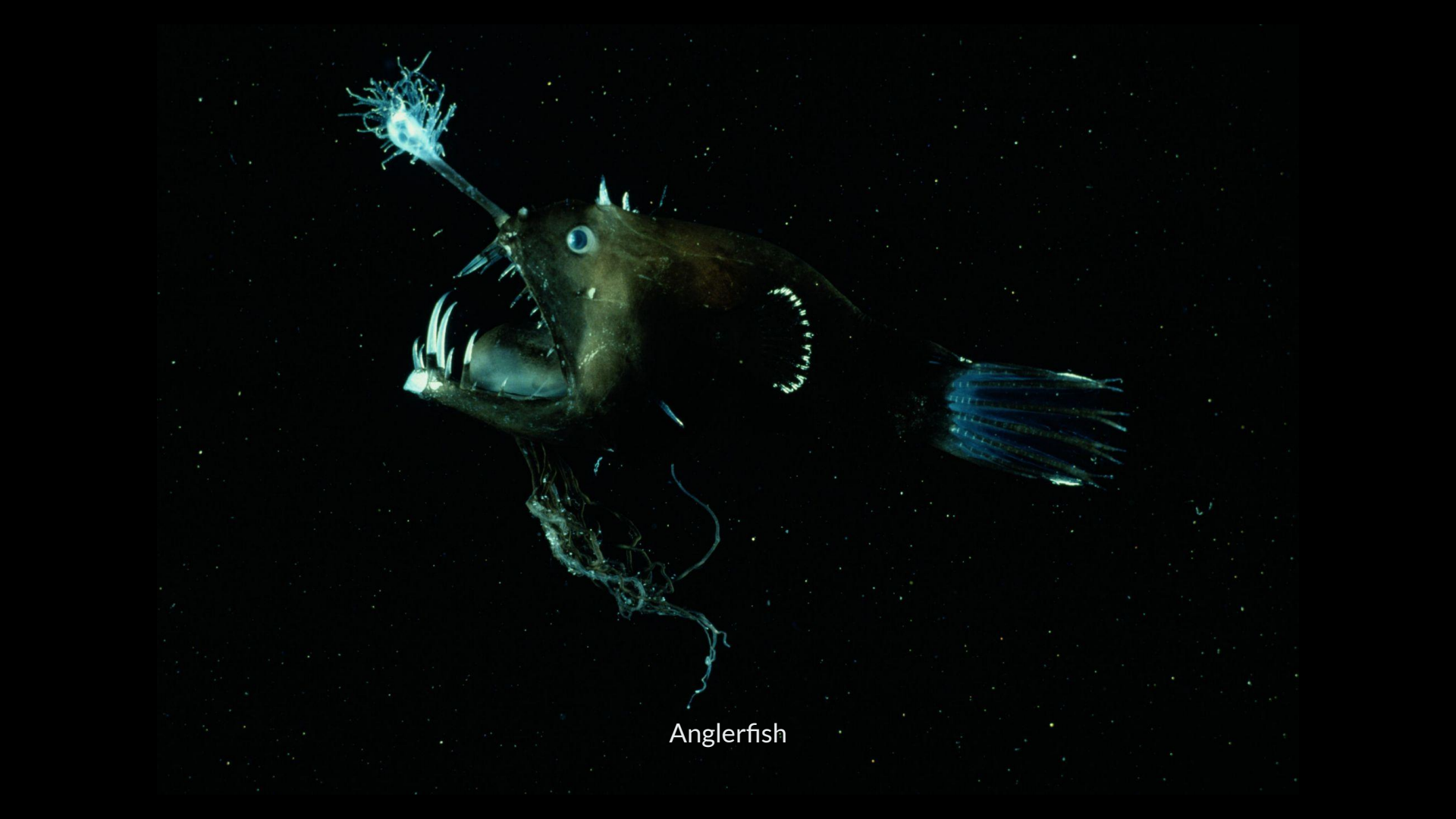
Hydrothermal Oasis

§2: Evolution Today

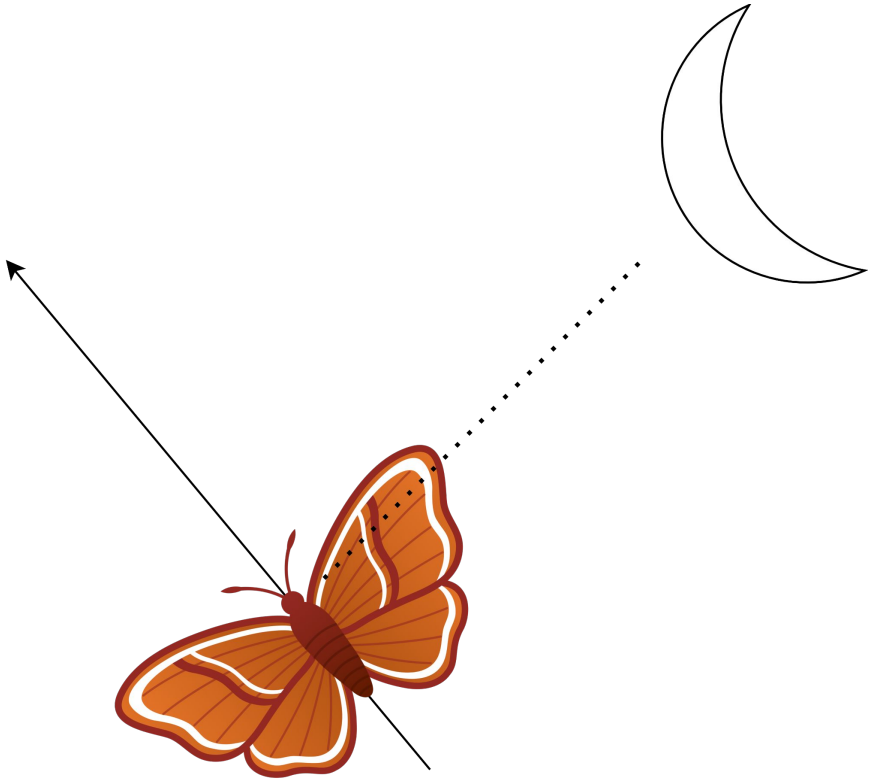
Too Much Pressure

Fat Cell Liquefaction

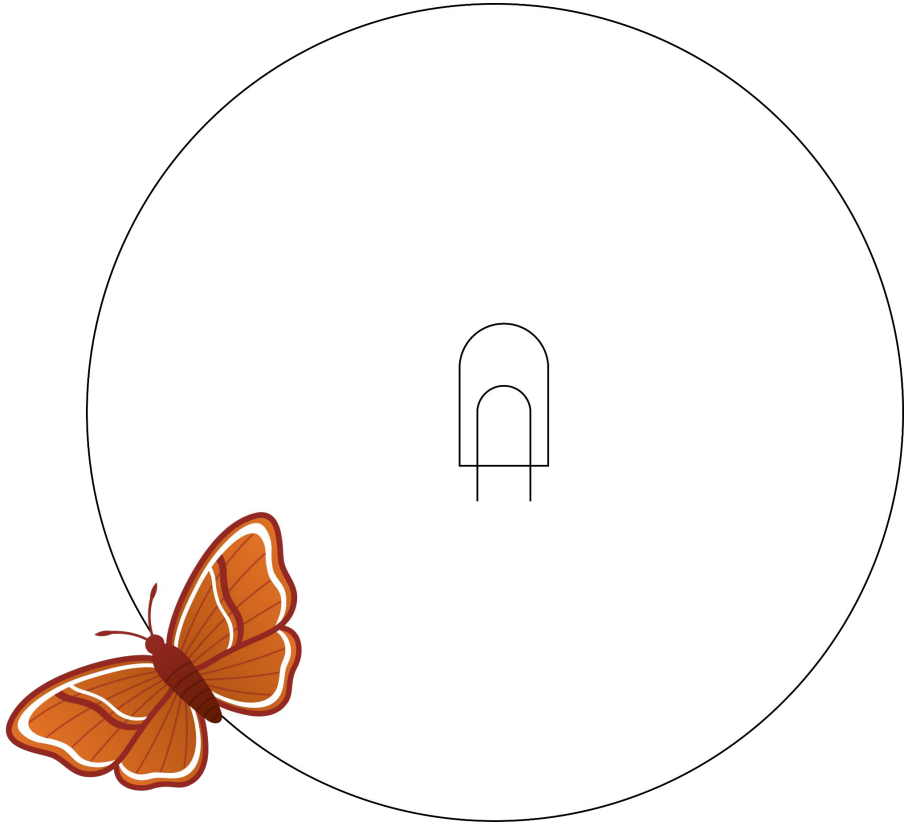
No Light



Anglerfish



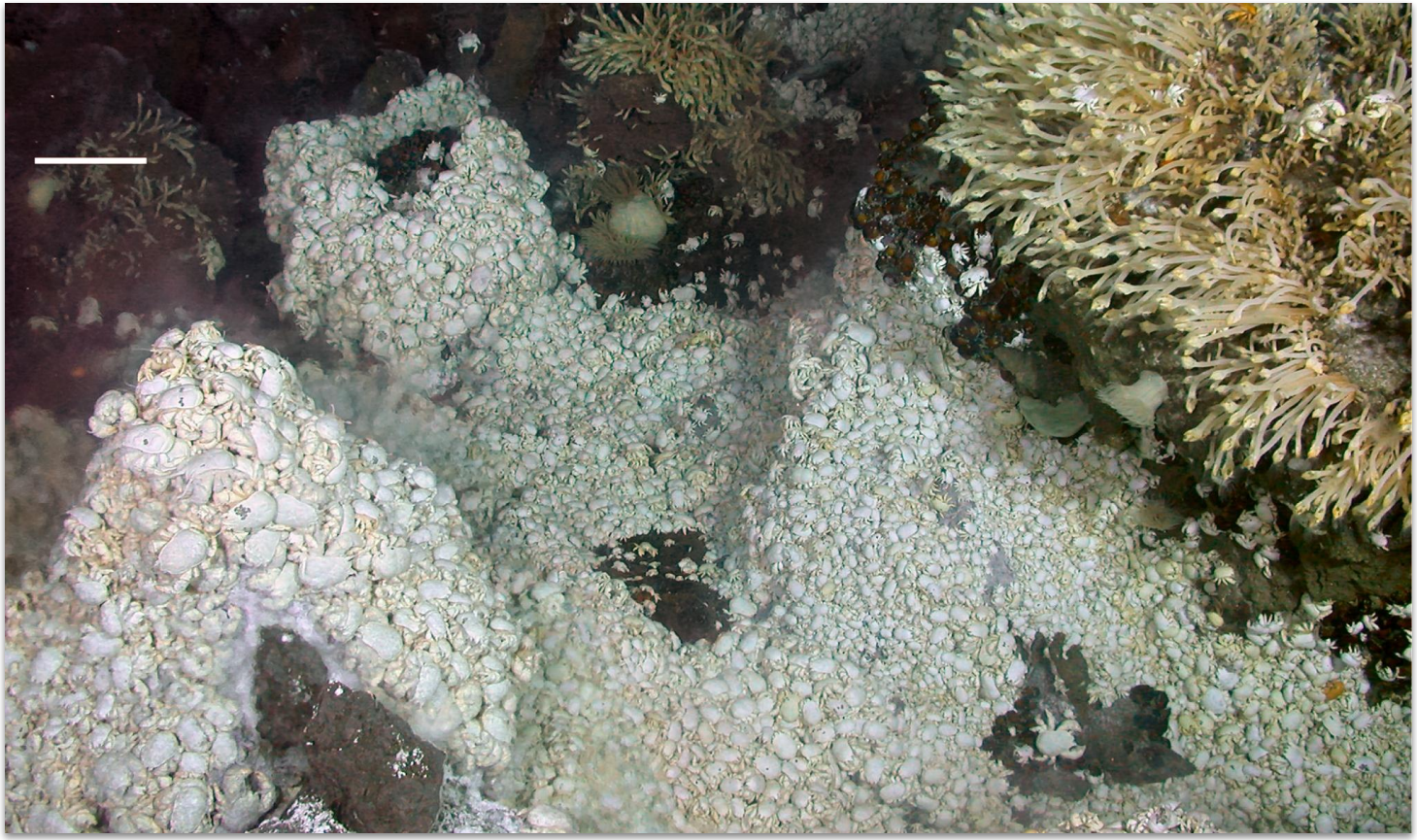
Moth vs Moon



Moth vs LED

Coral Bloom

No Food



Hydrothermal Oasis

Marine Snow

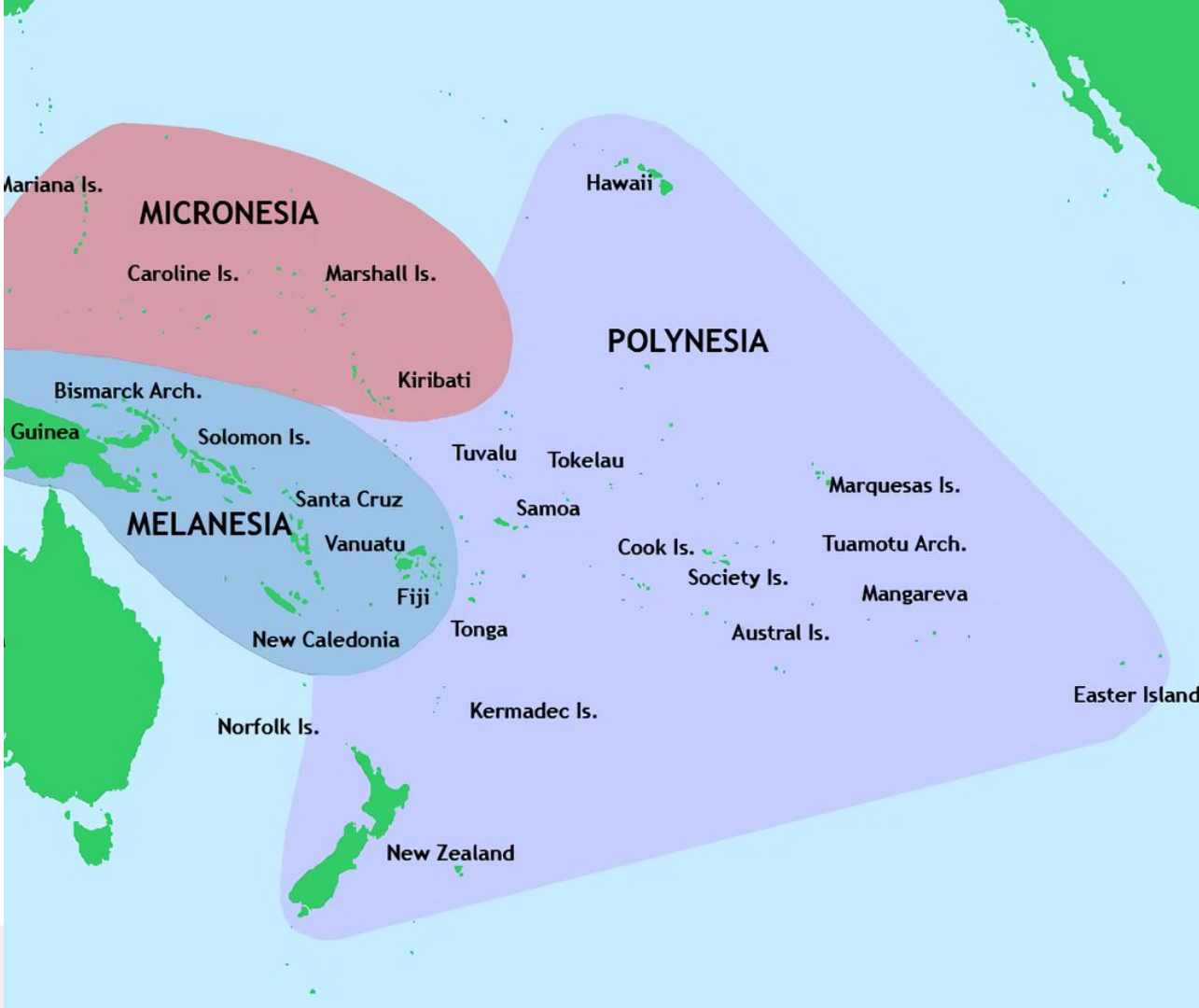

PBS
Whalefalls

Why are they Scary?

Factors Behind Deep Sea Gigantism

1. Klieber’s Rule: Larger animals are more power efficient
2. Bergman’s Rule: Colder animals are Larger
3. Island Rule: Small animals grow larger on islands

Analogy: Pacific Islands

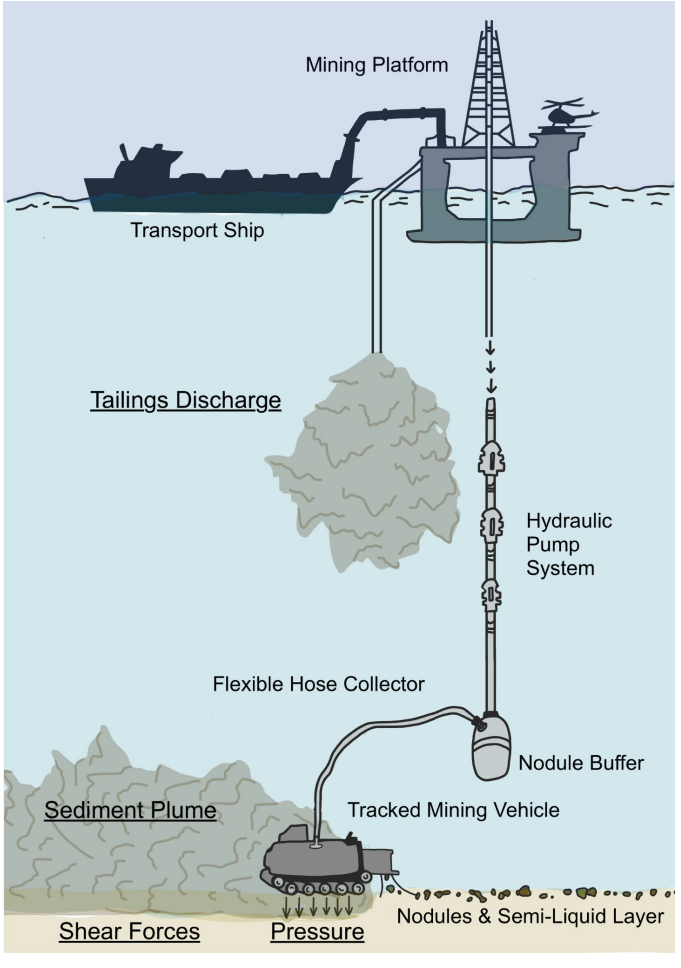



Youtube: EVNautilus

§4: Life's Last Refuge?

Deep Sea Mining

Volcanogenic Massive Sulfide (VMS) Ore



The End