

# Interesting Organisms

Main Page

Research Forum

Dinoflagellates

Dragonfish

Squid

Siphonophore

Milky Sea

Photos

Movies

**Marine bioluminescence is produced by an incredible range of organisms, from bacteria and single-celled protists to fish and squid.**

Some especially interesting examples are:

Bioluminescent [milky seas](#) where huge populations of bacteria give the ocean an eerie glow. [Includes a link to original paper.]

A [squid](#) which changes the color of its luminescence to match moonlight and sunlight.

A [siphonophore](#) which uses red light to lure fish to its tentacles.

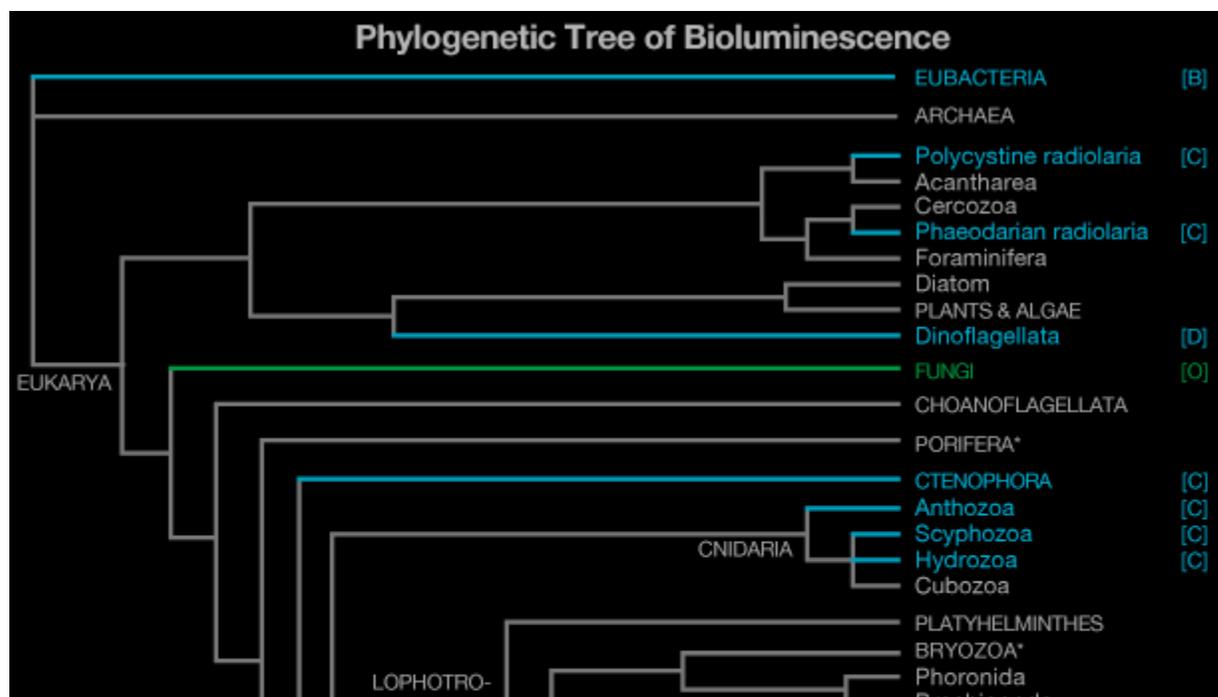
Tiny single-celled [organisms](#) that make the sea sparkle.

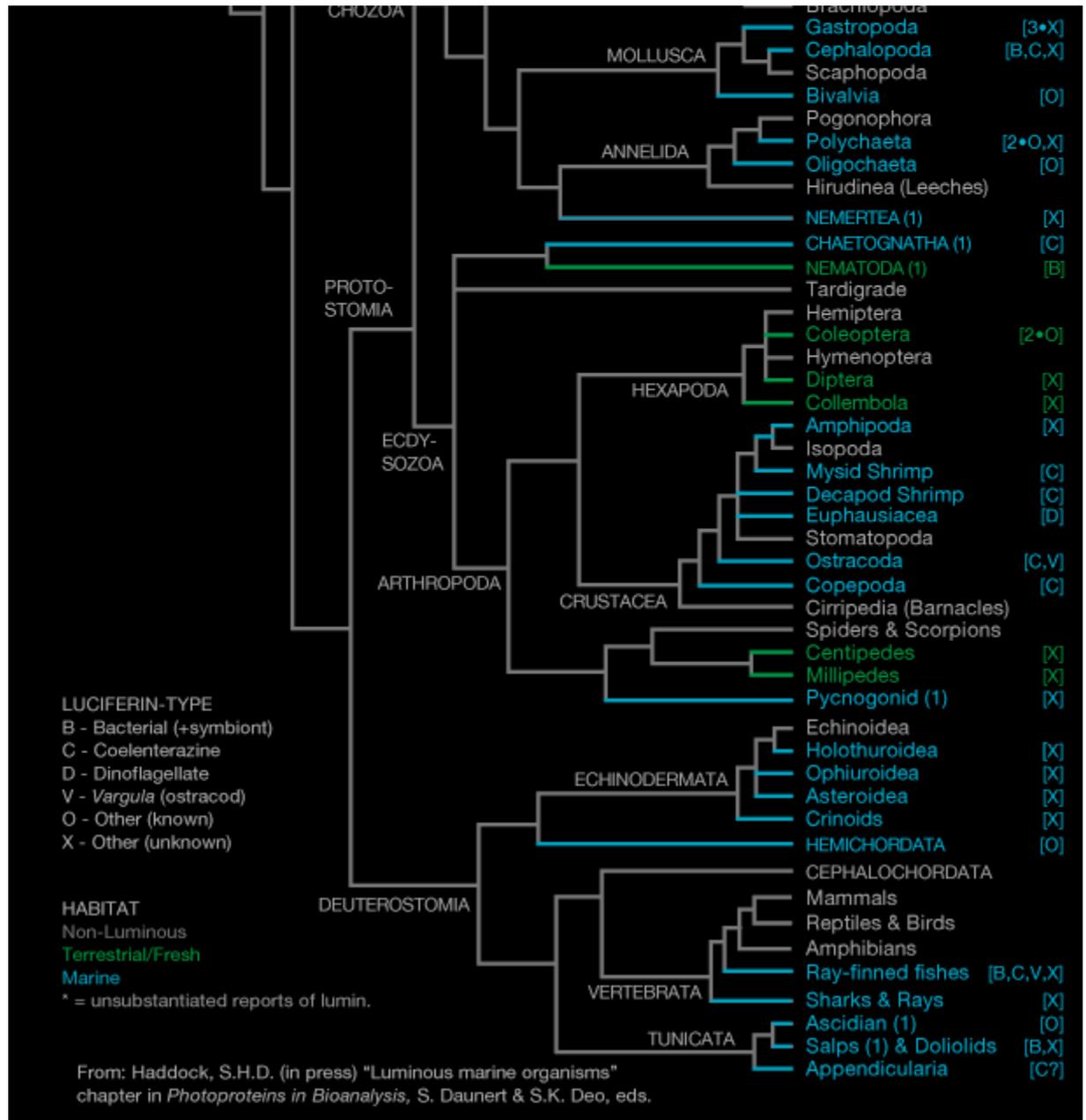
Fishes like *Malacosteus* and *Aristostomias* with their own "[night vision](#)" light.

Crustaceans which send out coded messages to their own species when it is time to mate.

Here is one possible phylogenetic tree showing the distribution of bioluminescence across the "Tree of Life". Neither the tree nor the taxa identified as luminous are set in stone, and there is already new information on both aspects. However, note how many times bioluminescence appears to have arisen (more than 40, considering that one group of organisms may have several different chemistries.) It is a remarkably broadly distributed phenomenon.

(Below the tree you will find a partial text list of bioluminescent organisms.)





This is a partial text list of bioluminescent organisms.

If an organism is listed here it means that at least **one** species in that group is luminescent, not that all such creatures make light.

This list is intended to give an idea of the diversity of bioluminescent creatures. It is not meant to be comprehensive, and there may be other luminous creatures which are not included here.

Bacteria  
 Fungi  
**Dinoflagellates** (single-celled algae)  
 Radiolarians (single-celled marine organisms)  
 Cnidaria  
     Scyphozoa (Jellyfish)  
     Hydrozoa (Hydroids and Hydromedusae)  
     Anthozoa (Sea Pens and Sea Pansies)  
 Ctenophores (Comb Jellies)  
 Nemertean worms (1 species)

- Mollusca
  - Nudibranchs (a few)
  - Clams (few)
  - Squid (many)
  - Octopods (few)
  - Limpet (1 type)
  - Land Snail (1 type)
- Annelid worms (lots)
  - Polychaetes
    - [Earthworms](#) [external site]
- Pycnogonids (sea spiders)
- Crustaceans
  - Copepods
  - Ostracods
  - Amphipods
  - Decapod shrimp
  - Euphausiids (krill)
- Chaetognaths (arrow-worms; 1 species)
- Echinoderms
  - Sea stars
  - Brittle stars
  - Sea cucumbers
- Hemichordate worms
- Urochordates
  - Pyrosomes
  - Tunicate (one)
  - Larvaceans
- Chordates
  - Sharks (some)
  - Fish (lots)
- Centipedes
- Millipedes
- Insects
  - [Fireflies](#) [external site]
  - Click Beetles
  - Fungus gnats
  - Collembola (spring-tails)
  - Railroad worms

---

(There are no luminous "flowering" plants, birds, reptiles, amphibians or mammals.)

---

[Download printable [PDF version](#) of this page]

||

| E-mail [biolum@lifesci.ucsb.edu](mailto:biolum@lifesci.ucsb.edu)