

TABLE 6.8. Symbioses

Type of Symbiosis	Host Species	Symbionts	Description
Autotrophic	Giant tube worm, <i>Riftia pachyptila</i>	γ -proteobacteria	Chemoautotrophic bacteria feed the host sugars just as plastids do for plants.
	Tunicates	<i>Prochloron</i>	Photosynthetic bacteria feed the host animal sugars.
	Fungus	Algae or cyanobacteria	Lichens are able to photosynthesize.
Nutritional	Aphids	<i>Buchnera</i>	Symbionts synthesize amino acids for insect species that feed on amino-acid-poor sap.
	Humans	<i>Escherichia coli</i> , <i>Bacteroides</i> spp.	Microbes in the gut aid in digestion and the production of vitamins and cofactors.
Nitrogen fixation	Legumes	Rhizobia	Rhizobia infect nodules in legume roots and fix nitrogen for host.
	Azolla (water fern)	Cyanobacteria	Cyanobacteria fix nitrogen for host.
Digestive	Termites	Bacteria, archaea	Symbionts help digest cellulose.
	Cattle	Ciliates, bacteria, archaea	Symbionts help digest cellulose.
Luminescent	Flashlight fish	Photobacterium	Bacteria emit light in specialized fish organs.