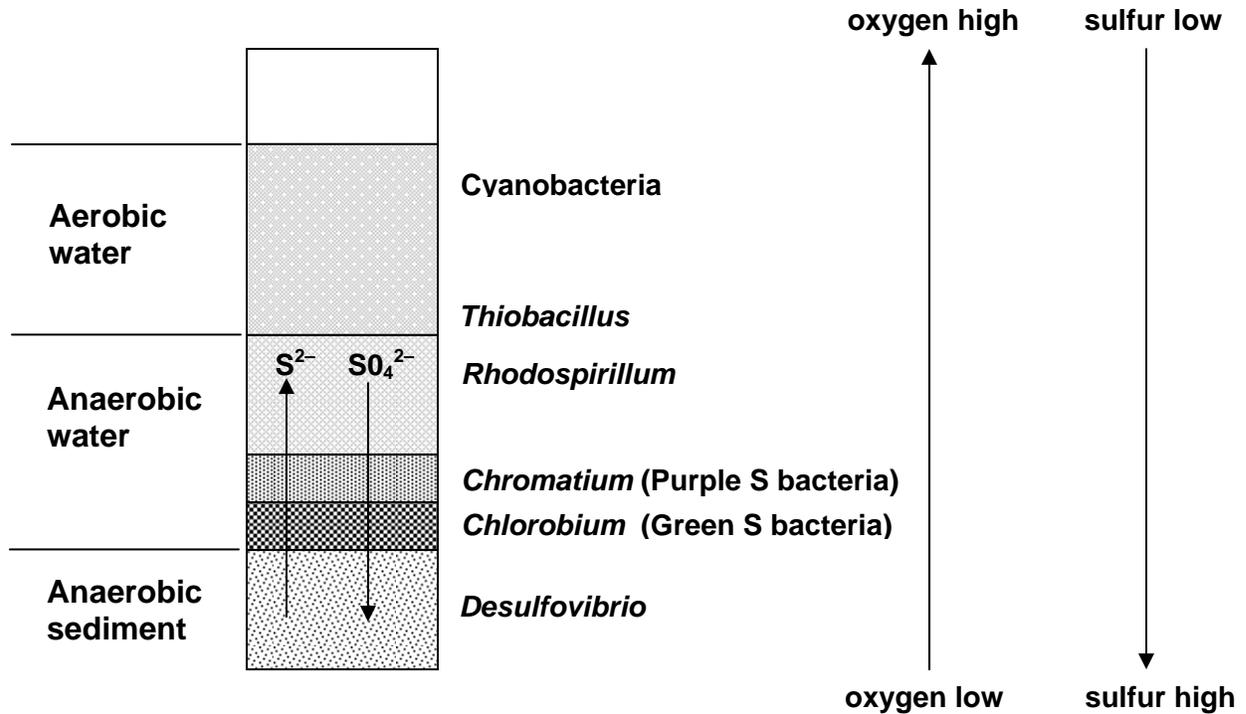


As a mini-ecosystem, the Winogradsky column reveals the complex interactions that occur between microbial communities and their environment.



- Photosynthetic bacteria, such as cyanobacteria, grow in the column's upper zones, which are rich in oxygen.
- Oxygen levels gradually decrease in the lower zones. Chemosynthetic bacteria convert sulfur into various forms that circulate in the column and are taken up by other chemosynthetic bacteria at different levels.
- Thus, each micro-organism is dependent on the others to create the conditions it requires for life.
- As shown in the figure below, sulfate reducers, such as *Desulfovibrio*, reduce sulfate to sulfide, which sulfur oxidizers, such as *Thiobacillus*, oxidize to elemental sulfur and sulfate.

