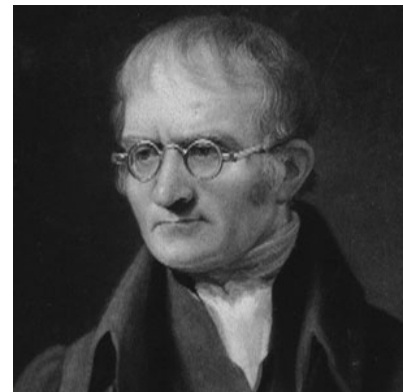
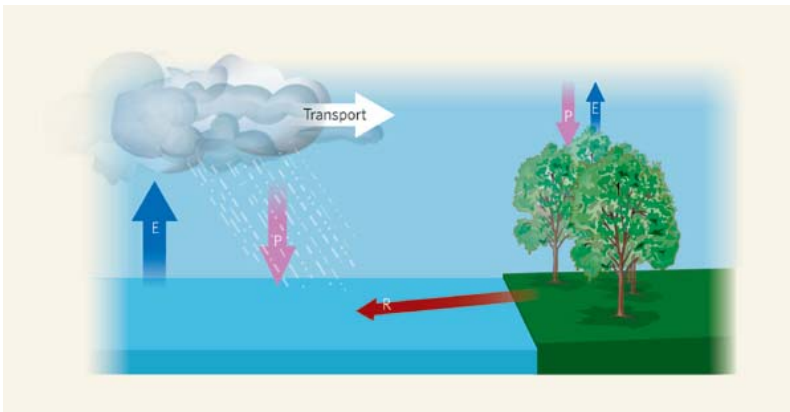


The coupled carbon-water cycles in the terrestrial biosphere

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Topic 4: Going on a limb to the continental and globe scales – A look at contemporary issues in the global and continental scale coupled carbon-water cycles.



Having established all the fundamentals of carbon-water interactions, we proceed to use them to tackle critical problems most pertinent to climate change and the acceleration of the hydrologic cycle. We commence by demonstrating that Dalton's seminal work, along with others in the nineteenth century, lead to developments of quantitative laws for evapotranspiration that find wide use today in constraining estimates of the acceleration of the hydrologic cycle due to projected increases in global air temperature. The term 'acceleration of the hydrologic cycle' here refers to the fact that higher temperatures provide more kinetic energy to water molecules, leading to more evaporation and thus more precipitation. We proceed to discuss the continental scale hydrologic cycle and competing theories as to the causes for its fluctuations.

References and expanded reading material

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