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Capillary Action may act as a cooling method in Plants and Animals RICHARD KRISKE, University of Minnesota — A capillary tube in a plant may lead from its roots to the leaves. It takes no work for the column of water to rise from the roots to the leaves, and if there is capillarity in the soil, it takes no work for the water to flow through the ground to the roots. It does take work for a molecule of water to evaporate from the tube into the atmosphere. When a molecule of water evaporates another molecule travels through the soil and up the plant to replace it. The lost molecule creates a "hole" in the water column which like a signal is sent to the root and the sea of water in the soil replaces it. Since the water molecules are not unique this is the same situation as if the water vapor where condensed back to a liquid in a refrigeration cycle. Another interesting aspect of this sort of refrigeration is that the "hole" itself may be used to do work along the wall of the capillary tube, which may have Fermi Levels in it. An Hydraulic Semi Conductor, and in it is a method of cooling the Semi Conductor. This may be applicable to other similar systems using other liquids, or substances such as nanotube systems, where the hole signals,cools and performs chemical reactions involving not only obitals but Fermi Levels, a transition between Quantum and Classical Mechanics, with surprises.

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