liquid water held in the pores of the soil, in the form of surface films representing the curved surface seen in capillary tubes, and therefore tending to cause the water to move upwards, as well as in all other directions, until uniformity of tension is established, is of vastly higher importance to plant growth than hygroscopic moisture. It not only serves normally as the vehicle of all plant food absorbed during the growth of the usual crops, but also, as a rule, to sustain the enormous evaporation by which the plant maintains, during the heat of the day, a temperature sufficiently low to permit of the proper operation of the processes of assimilation and building of cell tissue."[1]

The rise of water in capillary systems resembling soil, under the action of surface tension, may be as much as ten feet. In soil itself the highest rise under the usual circumstances is unquestionably as much as four or five feet; but if the surface tension of water were like that of most liquids it could be, under similar conditions, but two or three feet. There seems to be little doubt that the rise of fluids in tall plants is also in large part due to the action of surface tension, and accordingly it must be much favored by the

[1] Hilgard, "Soils." New York, 1907, p. 201.