

and the younger and more active these organs are, the greater will be the volume of water transpired within a given time. Upon the same principle, plants exposing large leaf areas, which retain their activity for a long time, are much more energetic agents in effecting this transfer and conversion than those which are more woody, have a less proportional leaf area, and mature earlier.

Various investigations have from time to time been made, to determine the actual amounts transpired under different conditions. It will answer our present purpose to cite only one or two of these results. Höhnel records that in an old beech forest somewhat more than 100 years of age, the whole volume of water transpired by one hectare or 2.47 acres, during the six months from June 1st to December 1st, amounted to between 2,400,000 and 3,500,000 kilos, or from 5,291,000 to 7,716,100 pounds, which, reduced to liquid measure, would give from 529,104 to 771,610 gallons. But these figures express only a portion of the water actually withdrawn from the soil, whence we can readily understand that plants serve as a drainage system as it were, for the soil.

This fact has of recent years, been somewhat largely taken advantage of, for the purpose of draining swamp lands with a view to improving them for purposes of tillage, and to remove their influence in promoting the dissemination of malarial organisms which are formed in the presence of large quantities of decomposing organic matter. For this purpose such plants as the sunflower, with its great expanse of leaf area, from which transpiration may proceed at a rapid rate, may be used. But the *Eucalyptus globulus*, or the blue gum of Australia, appears to answer this purpose even more fully, and is at the present time largely employed.

The liberation of large volumes of water by a forest, as indicated above, necessarily tends to reduce the temperature of the surrounding air and to bring it nearer the point of saturation--i.e., it increases the relative humidity of the atmosphere. Any general influence which tends to still