

of the trees, from which it is at once evaporated. But much of it also slowly percolates through the forest soil, which is generally more porous and absorptive than other soils, to the roots of the trees, whence, in time, it rises to the leaves, to be there evaporated likewise. The humidity of the atmosphere, thus caused by the evaporation from the leaves of the trees of a large portion of one fall of rain, soon results, in turn, in another fall. In this way not only is the total rainfall more evenly distributed throughout the year, but the supply of water for the streams that originate in the forest is made much more continuous and steady.

(5) In cold climates, forests are of immense service as a protection against cold blustering winds, which freeze out winter crops in exposed places, and cause snow to accumulate in drifts on the highways. Moreover, the melting, in springtime, of the snow in forests is generally slow and gradual; hence the presence of forests helps to prevent spring freshets, oftentimes the cause of serious damage.

Summing up, therefore, it may be said that the removal of forests tends to render land infertile, because of (1) the excessive dryness of the soil which the greater rapidity of evaporation caused by the loss of the forests occasions; (2) the greater extremes of temperature which ensue; (3) the increased destructiveness which the winds effect, owing to their greater freedom when they are unobstructed by forests; and (4) the increased destructiveness which falls of rain effect, owing to the fact that, in countries destitute of forest, they are of comparatively infrequent occurrence, and therefore, when they do occur, are usually very heavy, and so cause large quantities of water to rush over the surface of the ground, and thus wash away the best portions of the soil.

It will be seen, then, that in a country which, like our own, has once been well covered with forests, their complete removal may very seriously affect both the climate of the country and the fertility of its soil. Therefore it should be the duty of every one owning land either to preserve some of the original forest of the land, or to supply its place by trees planted in suitable places and specially cultivated.

#### **482. The Purposes for Which Forest Trees are**