

remainder being produced by absorption from the watery vapor of the atmosphere.

But there are other beneficial effects produced by growing vegetables and particularly by trees and forests besides that resulting from their consumption of their proper food in the shape of the gas of the atmosphere and the exhalations that arise from putrefying substances, and from the bodies and bred of living creature—all of which are destructive to animal life. Baron Humboldt, an accurate observer of nature, a philosophical writer of the highest standing, and a man of vast experience and varied culture, explains the reason of the effect of forests on the climate, through its action on the surrounding atmosphere, as follows;

"The forest region acts in a three-fold manner, by the coolness induced by its shade, by evaporation, and by the cooling process of radiation. Forest....protect the ground from direct insolation, evaporate the fluids they have themselves produced, and cool the contiguous strata of air by the radiation of heat from their leafy appendicular organs." "In the serene and long nights of the equinoctial zone, the forest air, which is contained in the interstices between the strata of leaves, becomes cooled by the process of radiation; for a tree, a horizontal section of whose summit would hardly measure 2,000 square feet, would in consequence of the greater number of its appendicular organs (the leaves,) produce as great a diminution in the temperature of the air as a space of bare land or turf many thousand times greater than, 2,000 square feet."\*

We see from this that though perhaps a certain space covered with growing vegetables may consume as much moisture as an equal breadth of soil devoted to trees, the latter

have a far greater influence on the temperature.

It is easy to prove by direct facts and thermometrical observations that the climate along our seaboard and in the interior has undergone a material change during the last seventy years, and is constantly changing year by year, through no assignable cause except the destruction of our forests. The Winters are colder, and there is less snow, and the Summers are hotter and more dry. As less rain falls, the evaporation from the surface of the earth is so much greater that springs disappear, streams shrink into narrow dimensions, and lands formerly fertile and productive become parched and dried up with intense heat. Humboldt records the fact that "the Winters of Salem (Mass.), instead of having been rendered more mild, as conjectured, from the eradication of the forests, have become colder by 40 Fahr., during the last thirty-three years."† The writer of this article can recall several examples of the deleterious effects of cutting down a forest in that part of the country where he was born and reared. While it stood, the cleared fields adjacent were covered during the Winter and Spring by a protecting garment of snow, produced unfailling and large crops of Winter wheat, which never flourished after the wood was cut off, and a large and durable spring, under the south side of the same forests, which had never been dry since the settlement of the locality, a period of forty odd years, failed totally during several weeks of every Summer. But these are only isolated examples. To see the subject in all its bearings, we must look at it from a more commanding point of view. Though the direct effect of one forest on the surrounding country will often be