

The changes which the destruction of forests, the clearing of plains, and the cultivation of indigo, have produced within half a century in the quantity of water flowing in on the one hand, and on the other the evaporation of the soil, and the dryness of the atmosphere, present causes sufficiently powerful to explain the progressive diminution of the lake of Valencia. I cannot concur in the opinion of M. Depons* (who visited these countries since I was there) "that to set the mind at rest, and for the honour of science," a subterranean issue must be admitted. By felling the trees which cover the tops and the sides of mountains, men in every climate prepare at once two calamities for future generations; want of fuel and scarcity of water. Trees, by the nature of their perspiration, and the radiation from their leaves in a sky without clouds, surround themselves with an atmosphere constantly cold and misty. They affect the copiousness of springs, not, as was long believed, by a peculiar attraction for the vapours diffused through the air, but because, by sheltering the soil from the direct action of the sun, they diminish the evaporation of water produced by rain. When forests are destroyed, as they are everywhere in America by the European planters, with imprudent precipitancy, the springs are entirely dried up, or become less abundant. The beds of the rivers, remaining dry during a part of the year, are converted into torrents whenever great rains fall on the heights. As the sward and moss disappear with the brushwood from the sides of the mountains, the waters falling in rain are no longer impeded in their course; and instead of slowly augmenting the level of the rivers by progressive filtrations, they furrow, during heavy showers, the sides of the hills, bearing down the loosened soil, and forming sudden and destructive inundations. Hence it results, that the clearing of forests, the want of permanent springs, and the existence of torrents, are three phenomena closely connected together. Countries

* In his 'Voyage à la Terre Ferme,' M. Depons says, "The small extent of the surface of the lake renders impossible the supposition that evaporation alone, however considerable within the tropics, could remove as much water as the rivers furnish." In the sequel, the author himself seems to abandon what he terms "this occult case, the hypothesis of an aperture."