

Influence of Man in modifying the Physical Geography of the Globe.

Before concluding this chapter, I shall offer a few observations on the influence of man in modifying the physical geography of the globe; for we must class his agency among the powers of organic nature.

Felling of forests.—The felling of forests has been attended, in many countries, by a diminution of rain, as in Barbadoes and Jamaica.* For in tropical countries, where the quantity of aqueous vapour in the atmosphere is great, but where, on the other hand, the direct rays of the sun are most powerful, any impediment to the free circulation of air, or any screen which shades the earth from the solar rays, becomes a source of humidity; and wherever dampness and cold have begun to be generated by such causes, the condensation of vapour continues. The leaves, moreover, of all plants are alembics, and some of those in the torrid zone have the remarkable property of distilling water, thus contributing to prevent the earth from becoming parched up.

Distribution of the American forests.—There can be no doubt, then, that the state of the climate, especially the humidity of the atmosphere, influences vegetation, and that, in its turn, vegetation re-acts upon the climate: but some writers seem to have attributed too much importance to the influence of forests, particularly those of America, as if they were the primary cause of the moisture of the climate.

The theory of a modern author on this subject “that forests exist in those parts of America only where the predominant winds carry with them a considerable quantity of moisture from the ocean,” seems far more rational. In all countries, he says, “having a summer heat exceeding 70°, the presence or absence of natural woods, and their greater or less luxuriance, may be taken as a measure of the amount of humidity, and of the fertility of the soil. Short and heavy rains in a warm country will produce grass, which, having its roots near the surface, springs up in a few days, and withers when the moisture is exhausted; but transitory rains, however heavy, will not nourish trees; because, after the surface is saturated with water, the rest runs off, and the moisture lodged in the soil neither sinks deep enough, nor is in sufficient quantity, to furnish the giants of the forest with the necessary sustenance. It may be assumed that twenty inches of rain falling moderately or at intervals, will leave a greater permanent supply in the soil than forty inches falling, as it sometimes does in the torrid zone, in as many hours.”†

“In all regions,” he continues, “where ranges of mountains intercept the course of the constant or predominant winds, the country on the windward side of the mountains will be moist, and that on the leeward dry; and hence parched deserts will generally

* Phil. Trans. vol. ii. p. 294.

† Maclaren, art. America, Encyc. Britannica.