Forest the Preserver; Fire the Destroyer

(By Lucretius.)

APPROPRIATELY placed native forests are a country's greatest asset; for the forest is the greatest preserver of the soil, and our very existence depends on the soil and its continued fertility.

Many past civilisations have perished as a direct result of wanton destruction of their forests. Who has not seen pictures of the ruins of fine cities in North Africa, Asia Minor, Persia, China, etc., etc.? Did Darius, the great Persian conqueror, build his huge palace at Persepolis in an uninhabited waste? China 2,500 years ago had abundant forests; to-day wood is very scarce indeed in China, such forest as remains are being confined to almost inaccessible mountains. Destruction of the forest in the catchment areas of the ancient Mesopotamian irrigation system, the finest ever known, resulted in the formation of desert. The Mediterranean countries all show striking evidence of the dire results following deforestation. In Karst, for instance, naked rocks are found where once was forest. The country knows nothing but drought, all the rain that falls being lost in rock fissures or evaporated from the hot rock.

Until 1852 the foothills of the Himalayas in the Punjaub were used as hunting grounds and were covered in forest. In that year the British annexed the Punjaub and handed over these foothills to the villagers. Fire, the axe and the goat soon destroyed the vegetation. This area is now an oft-quoted example of the effects of accelerated erosion — a fertile wooded land which fifty years later was well-nigh useless.

The French Niger Colony is now largely desert, but two hundred years ago this huge tract of land had forests and its peoples were prosperous.

Innumerable other examples of the consequences of spoliation of the forests might be drawn from Africa, Asia, America and Australia. No continent has not suffered.

In New Zealand the impoverishment of our native forest resources by fire and improper management is a matter of immediate concern; it is the concern not only of the timber merchants, but of manufacturers, bankers, farmers and indeed every one of us. Already in this country, barely a hundred years old in white man's history, far too much of it has gone. It behoves us not to be heedless of the lesson of the Punjaub and other places where the forest has been destroyed.

Soil eroded is soil lost, maybe for ever. But it is well to remember that the soil, with its bacterial and other minute life, the vegetative covering and the animals living therein, constitute one whole, whose parts cannot be considered as separate entities. Vegetation certainly grows on the soil, yet were it not for vegetation there would be no soil. Soil consists of more than disintegrated rock and water; it has an organic part, the humus, derived mostly from decayed vegetation.

All vegetation helps to form soil and to protect it from being washed away by excessive rainfall or being blown away by wind, but the best form of vegetation for protecting the soil is forest in its natural condition, especially where the terrain is rough.

Trees, as everyone knows, act as protection against wind, but their action against other erosive agents is not so well known.

The canopy of leaves and branches prevents the beating effect of rain falling directly on the soil. Leaves drip for as long as an hour or more after rain has ceased falling. Dew and mist condensing on the leaves act in a similar manner.

When the water has dripped from the leaves it falls on to the litter of leaves and other debris on the forest floor. This litter, together with the underlying humus, absorbs the water, preventing a rapid run-off, and gradually passes it down to the deeper layers of soil and subsoil, where it is held as an underground reservoir. A large quantity of the underground water is absorbed by the roots and returned to the atmosphere as vapour from the leaves, but most of it seeps through the soil to the streams.

Streams arising in forested regions remain clear, and their water content does not vary much throughout the year. Thus it is that forests are the great controller of floods, and by far the least expensive.

One hundred and fifty years ago the local