

storms, should be in any way affected by the removal of a few insignificant plants from about their base. But so it is. They, and all, or nearly all, of the larger trees in our bush, are dependent for their very life upon the growth which is so thoughtlessly allowed to be destroyed. As may be easily seen after a bush-burn, or where a tree has been overturned by the wind, the principal roots scarcely penetrate the ground. Running like a network of tangled snakes along the surface, they are protected by a sort of humus composed of decaying vegetable matter, which is kept in a moist condition by the multitude of ferns, mosses, and small plants of every kind which occupy every inch of space wherever the forest is undisturbed. Once this growth has been destroyed, which very soon happens when a browsing animal is admitted, a change begins to pass over the scene. The larger trees, deprived of the shelter at their feet, gradually grow thin and open at the top. The cathedral gloom and the damp solitude in which flourished the palm-like nikau and the stately fern-tree are penetrated by the burning sun, and invaded by fierce and parching winds. All the magic profusion of grace and beauty begins to shrivel and die; and as further desiccation takes place the unprotected roots can no longer support the strain they have to bear, and every here and there some hoary patriarch falls crashing amid an acre of ruin. And thus the game goes on: each step in the chain of destruction preparing the way for the next at an accelerated rate of progression until the ruin is complete, when sooner or later the desolated region is swept by the fire from some neighbouring clearing, and at last a few charred stumps and bleaching skeletons are all that is left to mark the irretrievable loss of a paradise of beauty.

That this destruction is constantly going on may be seen in all the older settlements, where it may be observed in the rapidly-shrinking area of the standing forest and in the prevailing grey and brown tones of the tree-tops, which, with the dry and lifeless branches, impart an air of gloomy monotony to the portions which still remain. In some districts whole families of trees are fast disappearing. Of the tawa, a tree of very wide distribution and one whose value is just beginning to be recognised, it is now in many places a rare thing to find a perfect speci-

men.* The thin bark on its slender superficial roots bleeds to death on the slightest injury, and the tree rapidly perishes. The mahoe and the ngaio, once found in abundance on the Auckland isthmus, are now almost a thing of the past; and the whau, a handsome broad-leaved shrub which flourished in rich volcanic situations, is, in most settled districts, practically extinct.† Other trees make a longer struggle for life; but, sooner or later, with few exceptions and under more than usually favourable circumstances, they all succumb to their change of condition.

* See Kirk's "Forest Flora of New Zealand, article "Tawa."

† L.c., article "Whau."

NOBLE PERHAPS; BUT DISASTROUS IN NEW ZEALAND.

(From a drawing by R. Bruce Horsfall in "Nature Magazine.")

