

made from a photograph taken by Professor Cotton, of Wellington. It shows the results of rain falling in one direction only, making earth pillars and "fingers." The action is a double one, both washing away and dissolving.

The answer is obvious. Steep hillsides should be allowed to remain under vegetation. This will hold not only the soil but the moisture. Thus the lower and more valuable lands will be protected against erosion, flooding and drought. If the hillside is cleared, it should be done in blocks following the contours. If it is possible to plough the slope, it should be ploughed along the contours. Then the soil is held and erosion is small.

In New Zealand, erosion is a serious threat. The natural vegetation is of a type that is not adjusted to grazing animals and the native grasslands are rapidly disappearing. Remember that the deserts of North Africa were once called the granaries of the Roman Empire. That is forgotten now. The Arab, overgrazing with goats, was responsible. Overgrazing is more than bad farming; it is a crime. Another more wide-spread crime is burning off. It has seriously damaged the soil and speeded the erosion of the drier areas.

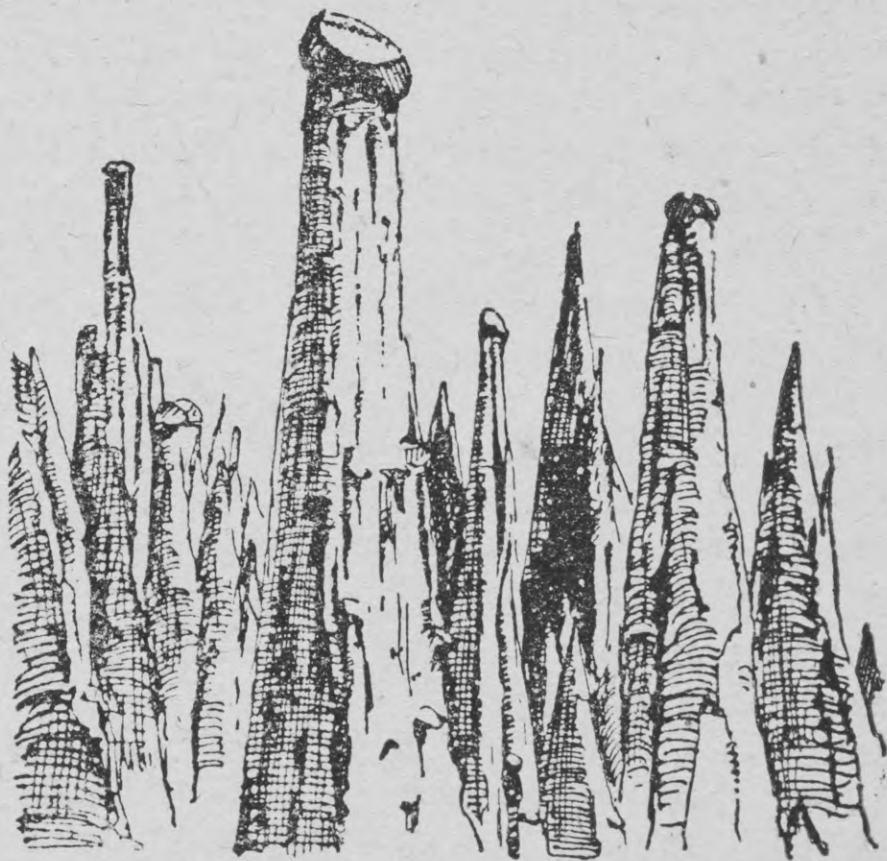
If you hear the statement, "Well I won't be here in 100 years," remember that erosion can destroy 50 per cent of New Zealand grasslands in a lifetime. Listen to the story of the "Dust Bowl" in America: in the early 1930's a series of droughts destroyed the crops and grass, cracking and drying the soil. By 1934, a wind of under 30 miles an hour would raise such dust storms that in New York, 1500 miles away, cars had to use their head-lamps. And thousands of farmers were ruined.

Floods too, are a result of the washing away of the soil; yet few people suggest tackling them at the root, i.e. on the watershed. No. They will spend thousands of pounds building stopbanks, even carrying the river above the level of the surrounding countryside. With the increased soil erosion in the headwaters, the river cannot carry the load of material; so

it deposits it in its bed. When rain falls there is little soil to retain it, it runs off into the shallow bed, and there is a flood.

Simple; so why not tackle the problem by holding the water in the watershed? With wise afforestation the water and soil are held, the level of the river is more constant throughout the year, and valuable timber is produced so that there is a return for the money. The obvious answer is to create forests on the water-catchment areas, and to protect existing ones from fire and deer. Yet how little is done!

The type of erosion mentioned above, which can be called rain-wash erosion, is the most insidious and destructive type. River and stream erosion is noticed and generally controlled at once. This type of erosion takes place in three ways—by corroding the bed of the river, by solution, and by under-cutting the bank. The last is the most important, but, provided the watershed is controlled, the actual erosion of rivers can be checked by planting willows,



*Earth pillars caused by rain.*

poplars and other soil-binding plants. The main part of the erosive work of rivers is in carrying away the soil and debris that has been collected by washing higher up in the watershed.

New Zealand is fortunate in that she is not over-populated. Unlike many European countries, she can afford