soil from the beating of heavy rains; and thus keeping it in a more loose and receptive condition.

(5) By the shade and by its control of the winds it holds the snow cover until late in the spring, thus giving opportunity for the water to penetrate the ground slowly instead of running off in floods.

Of these factors 1, 3 and 4 (*a*) tend to diminish the amount of water in the soil, and thus to lower the water-table. The other factors tend to increase the water supply relatively, and to raise the water-table.

(1) The amount of rainfall intercepted has been variously stated by different experimenters. Of course, a light shower is almost entirely intercepted by the tree-crowns of a dense forest, and given back to the air immediately as vapor; while the greater part of a heavy or long continued rain must reach the ground. On the average from 10 to 20 per cent of the total rainfall is intercepted. This amount is, of course, a direct loss to the forest soil.

(2) As has been already stated, the wind-breaking power of the forest is one of its most important influences. The cold, dry winds of winter, sweeping unchecked over the vast treeless plains of the North-West make it exceedingly difficult to rear fruit trees. Still more destructive to tree life is the warm, dry wind known as the Chinook. The Chinook, in Northern America, has been known to consume entirely in twelve hours a snow cover of 2½ feet deep, and to raise the temperature 57 degrees in 24 hours, while the humidity fell in the same time from 100 to 21 per cent. It is probable that the treeless state of the North-West is the result of these sudden and extreme changes of temperature and humidity. If a forest could be interposed in the path of the Chinook, its well-known action in checking the velocity of the wind, and in preventing extremes of temperature and humidity, would result in self-preservation. At any rate, the beneficial effects of shelter belts, clumps of trees, or wooded areas, upon orchards and crops that lie to the leeward is unquestioned. The high winds are checked, and the fruit trees are not subjected to winter drought. The snow is allowed to lie evenly, and to remain longer. The general effect, summer and winter, of the forest in reducing evaporation is most beneficial. An Illinois farmer sums up his observation upon this matter thus: "My experience is that now, in cold and stormy winters, wheat protected by timber belts yields full crops, while fields not protected yield only one-third of a crop. Twenty-five or thirty years ago we never had any wheat killed by winter frosts, and every year a full crop of peaches, which is now rare. At that time we had plenty of timber around our fields and orchards, now cleared away."