

saturated at 39° Fah.—the average winter in Western Oregon—holds 4½ gallons; and 5,000 feet high, 23½ gallons. A column covering an acre, 1,000 feet high, at 39° Fah., holds 2,061 gallons; and 5,000 feet high, 10,305 gallons. Reduce this temperature to 32°, and 2,365 gallons must fall out of the latter column over the acre.

Again, a column covering an acre, 1,000 feet high, saturated at 52° Fah.—the average spring in Western Oregon—holds 3,278 gallons; and 5,000 feet high, 16,390 gallons. Reduce this temperature to 32° Fah., and 6,085 gallons must drop upon the acre.

Again, a column covering an acre, 1,000 feet high, saturated at 67° Fah.,—the average summer west of the Cascade mountains—holds 5,484 gallons; and at 5,000 feet high—or the base of Mt. Hood—it holds 27,420 gallons. Reduce the temperature of this column to 52° Fah., and 11,030 gallons must fall upon the acre.

The air over the basin of the Upper Columbia, often in early summer is raised to 67° Fah., and saturated by the vapor-laden ocean winds. But when this occurs, the cold air from the

snow-covered Coeur d' Alene mountains on the east, and the Blue mountains on the south, and the Simcoe and Cascade mountains on the west, rushes down, meets the sea winds, forming greater or smaller whirls, like eddies in river currents, cooling all the air and causing the rain-fall over wide spaces, or torrents from the whirling water-spouts.

#### REGIONS MOST EXPOSED.

Those places which can be heated quickly and intensely, and which have few cooling forests, or green fields, give occasion for the sudden and violent condensation of vapor by winds from colder regions. The equilibrium of the air must be restored by local, or by

extraneous influences. Those who watch the summer changes in the upper country, will notice the regular inflow of ocean winds after two or three hot days. The mountain winds are equally regular towards the hot plains. But increase the orchards, and fields of grain and vegetables, the shade trees and timber groves, and the air will be kept cooler, and thus violent storms and especially water spouts will become less frequent—less destructive. The Willamette valley, and all the forest covered belt of country west of the Cascade mountains, are almost free from violent storms, and entirely free from water spouts. Were it possible to destroy all these forests, this region would be subject to more terrific storms of this class.

the lips of the Great Teacher. The physical and spiritual forces are in harmony. Body and soul must live by care and wise labor. Woe to the land without fields, orchards and forests! Woe to that people without homes, school houses and churches!

#### CHANGES TO BE EXPECTED IN THE UPPER COLUMBIA REGION.

It has been styled a rainless desert, fit only for pasturage, and to be inhabited forever by roving herdsmen and shepherds. By degrees the farmer and orchardist, the gardener and the shade tree, the timber grove, the cottage, the village, the school house and the church are taking the place of herds and flocks, huts and wigwams. The dawn of a new era has come, which will make the desert to bud and blossom as

the rose, wherein the season will have sunshine and showers, and wherein also the moral waters will, it is hoped, be made to flourish with the light and life of truth and virtue. Sure, by natural law, will the material elements undergo changes of seasons by cultivation, and by as sure natural law may the moral changes improve.



THE OREGON CITY FLOURING MILL. From a Photo by C. M. KESTER.

Palestine, denuded of forests, orchards, fields and vineyards, is exposed to storms more fierce, and more sudden, and less beneficial than were known in its earlier ages of forest covered mountains and hills, and cultivated fields, olive yards and vineyards. The words of the Lord Jesus—Matthew vii, 27—were seen by natural law. The dry wadies of that land, once full of springs and water brooks, show how the destruction of forests and the arrest of cultivation, will desolate the fairest country and make its people poor. Destroy all true moral culture, and make a moral desert of any community and desolating floods will sweep them all away, by natural law, is the lesson from

#### THE OREGON CITY MILLS.

It is always a pleasure to us to notice our manufacturing establishments, we therefore present our readers in this issue with a correct view of the Oregon City Flouring Mills, of which Captain J. D. Miller is the enterprising proprietor. Located in the thriving manufacturing town of Oregon City, and directly on the bank of the Willamette river, the mill possesses most excellent shipping facilities, to which the swift steamer, A. A. McCully, of 240 tons burden, owned and run in the interest of the mill, contributes in no small degree.

The building was originally erected in 1866, for a paper mill, but 2 years