

"Heat"

The Present Truth – July 20, 1899

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When we were talking last week about heat, we said that the earth is now, during these long sunny days, storing up a supply of heat for the winter season, when it will give it out gradually.

Although, as we told you, all the heat in the world comes really from the sun, yet its rays are not hot in themselves, neither do they warm the air as they pass through it.

If this were so we should find that the higher we rise from the earth, and the nearer we get to the sun, the warmer it would be. But just the opposite to this is really the case.

Some gentlemen who went up in a balloon five miles above the earth suffered terribly from the cold, and their beards were all crusted over with frost. The temperature was twenty-nine degrees below zero.

You know, too, that the tops of high mountains are covered with snow all the year round, for at such heights there is never enough heat to melt it.

You are perhaps wondering how this can be, and it is well for us to seek for the reasons and the meaning of all the works of God; for in them all He is showing us His eternal power and love, and teaching us wisdom, so that we may learn to be [au?] by watching Him at work and learn the ways of our Heavenly Father.

In order to make heat, the sun's rays must strike against something. As they touch the earth they produce heat which is reflected or "radiated" from the earth into the air to warm it. Therefore the air that is nearest to the earth is the warmest, and it gets gradually colder the farther we get from the earth's surface.

In the summer the sun shines for so many hours in the day that large quantities of heat are produced and given off in this way, and the air gets very warm, as at present. During the night when the sun is not shining the earth gives out some of the heat that it has received during the day.

The amount of heat that the sun's rays produce depends upon the position in which they reach the earth. When the sun is right overhead, so that its rays came straight down, they strike the earth with more force than when they come slanting direction. And besides this a larger number of rays strike in the same place.

This is why it is so much hotter at noon when the sun is just over our heads than at sunrise or sunset, or any other time in the day when its rays come to us in a slanting direction.

Now can you think, dear children, of any benefits that come to the earth through this wonderful arrangement? What would happen if the air were warmed directly by the sun's rays passing through it instead of by the gradual radiation of heat from the earth? The days would be unbearably hot, and at night when the sun was withdrawn everything would freeze; and nothing could live at all in the winter months. So we see how in all

this God is working for the good and comfort of all His creatures, and to preserve the earth that He has created.

Then there is another which those find who live in countries like India and Africa. Since the higher up you go the cooler it becomes, those in these hot climates who live near the mountains find it easy to escape from the intolerable heat in the summer into the refreshing coolness of the upper air.

At the bottom of Chimborazo, a mountain in South America nearly 30,000 feet high, you would find a very hot, marshy region, with rich forests inhabited by tigers, monkeys and other creatures belonging to hot climates.

Higher up the mountain there is a cool, temperate region of continual spring, with trees and animals suited to the mild climate.

If you should climb the mountain higher, you would at last find yourself surrounded with ice and snow, and suffering from the most intense cold.

Of this place it has been said: "Summer, winter, and spring are here distinct thrones, which they never quit."