washed down the cliff and lay in a pile. There was no stream or running water anywhere near, no gulleys or ravines. Everywhere else the grass, leaves, twigs, etc., lay undisturbed on the ground, as they always do in such places. The only possible cause of the excavations was spouts of water falling on these places. I afterwards found a number of other similar excavations. These were all in Pierce County, Wis., near the Mississippi River, and were made in 1879.

CLIMATOLOGY OF COSTA RICA.

Communicated by H. PITTIER, Director, Physical Geographic Institute.

[For tables see the last page of this REVIEW preceding the charts.]

DECEMBER, 1902.

Notes on the weather.—On the Pacific side rains were generally in excess of the normal, and occasionally showers have interrupted the gathering and the preparation of the coffee. In San José the pressure was normal, the mean temperature slightly above the average, the humidity and rain scarce. On the Atlantic slope the weather did not show any special features. During the whole month the sunsets were characterized by their brilliancy, which was most remarkable on the night of the 9th. On that date the entire horizon was seen tinged with a deep fire-red color, the intensity of which diminished toward the zenith. The phenomenon began when the sun was about 5° above the horizon and lasted until about 9 p. m.

Notes on earthquakes.—December 8, 6^h 22^m a. m., slight shock NW-SE, intensity II, duration 9 seconds; 2^h 28^m p. m., slight tremors, NW-SE, intensity I, duration 3 seconds. December 9, 5^h a. m., shock NE-SW., intensity II, duration 6 seconds. December 10, 6^h 6^m a. m., tremors E-W, intensity I, duration 6 seconds. December 11, 3^h 7^m a. m., tremors. December 15, 5^h 5^m a. m., light shock ENE-WSW, intensity II, duration 6 seconds; 12^h 13^m., p. m., tremors ENE-WSW, intensity I, duration 4 seconds. December 16, 4^h 6^m a. m., oscillatory movement, WNW-ESE, intensity III, duration 8 seconds. December 18, 4^h 13^m 22^s a. m., strong shock WNW-ESE, intensity IV, duration 5 seconds; 4^h 19^m 30^s a. m., strong shock ESE-WNW, intensity IV, duration 6 seconds; 5^h 35^m a. m., sudden shock ESE-WNW, intensity III, duration 4 seconds; 5^h 43^m 52^s a. m., slight shock WNW-ESE, intensity II, duration 3 seconds; 5^h 47^m 20^s a. m., tremors; 3^h 9^m p. m., slight shock, intensity II, duration 3 seconds.

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W. F. R. PHILLIPS, in charge of Library, etc.

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