from the railroad commissioners, the manufacturers of clocks and watches, the mayors or other authorities in the cities of the state, the telephone and telegraph companies, or the observatory. He states that no reason for this action was given except economy; and he claims that the observatory should be at least reimbursed for the considerable expense which it had incurred in preparation for this service. Unless there is some reason for the action of the general assembly not apparent to us, its conduct is certainly most discreditable to a state so intelligent and so wealthy as Connecticut. Nobody can believe that the moderate charge upon the treasury, in return for a service of such universal advantage, can have been burdensome. It is more likely that the action was due to a lack of acquaintance with the points involved, or to the prejudice of some individual. It is remarkable that a state which may almost be called 'the land of the clock-maker' should by its official action throw contempt upon accurate time-keeping. Such 'jerky' legislation is what the state universities of the west are wonted to, but nobody expected it in a matter like this from the land of steady habits. The first of steady habits is fidelity to an engagement, real or implied; and the second is like unto it, — punctuality in all matters where time is an element in the obligation.

LETTERS TO THE EDITOR.

**** *Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Untimely death of a chipping-sparrow.

THE following tragic event occurred in the village of Wake Forest on the 15th of June. The nest was near completion: the lining of hair was being put in. Somehow, in the midst of this process, the sparrow's head became entangled in one end of a long horse-hair, the other end of which had been securely woven into the bottom of the nest. When he rose to go, the half-knot tightened round his neck, and poor chippy was found dangling some twelve inches below the nest, hung by the neck, and quite dead. I am told that a similar event occurred here a day or two after that stated above. In this case, however, the sparrow was hung by a cotton string, and was found so soon after the mishap, that he was released, having suffered little harm.

W. L. POTEAT.

Wake Forest college, North Carolina.

The Washington monument, and the lightning stroke of June 5.

By one who was near its base, the stroke of lightning which injured the Washington monument is remembered as a ball of fire coming towards him. Does not this observation explain the ball of fire so often reported? An electric spark passing between two points, will, to a circle of observers, present various appearances. If two inches long, it will be seen as a line of fire two inches long by some, while to those in the line of its motion it will be a single spark. So when a flash of lightning (a line of fire) is directed toward the observer, it must appear as a ball of fire, motionless if the movement is directly toward the observer, moving with comparative slowness if slightly off that direction, and with electric rapidity if across the field of view at right angles with the line to the observer's place.

M. C. MEIGS.

Washington, D.C.

Volcanic dust east of the Rocky Mountains.

My attention has recently been called to the interesting letter of Mr. George P. Merrill in *Science* for April 24, on 'Volcanic dust from south-western Nebraska,' and his subsequent paper on the same in the Proceedings of the U. S. national museum, 1885, pp. 99, 100. Since Mr. Merrill seems not to be aware of any earlier published notice of similar volcanic dust found east of the Rocky-Mountain region, a short note may not be amiss here.

In October, 1882, my friend and colleague, Mr. Samuel Garman, placed in my hands for examination a fine gray sand found in Dakota. This, on examination, was seen to be composed of volcanic glass in shards, tubes, etc., mostly water-clear; but a few forms contained glass inclusions and vapor cavities. A few grains were brown, like many of the rhyolitic glasses; many were ribbed, or thicker on one side, thinning down to an edge on the other; others were apparently of uniform thickness; and none gave evidence of being wind or water worn. A very little earthy material was found mixed with the volcanic ash. Mr. Garman gave an account of this deposit of glass before the Boston scientific society, Nov. 8, 1882, and a notice of it was published in the *Boston transcript* for Nov. 10. Attention was further called to this glass in my 'Lithological studies,' published early in November last, on p. 17. Mr. Garman has given me the following information regarding the deposit: —

"It was found about fifty miles south by east from the Black Hills, between the Niobrara and the White rivers, just north of the watershed, not far from the head of Antelope Creek. The bed is horizontal, and, as I remember it, nearly two feet in thickness at its thickest portion, and several rods in extent. The deposits in the immediate neighborhood are late tertiary. A small stream had cut away the bank in which the glass lay, exposing a considerable portion of it. From the exposed edge the powdery material is carried away by the wind as a fine, smoke-like dust. The glass in the bed is as clean as in the sample, except near the upper and lower surfaces, where it is mixed with other matter. To be so clean, it must have been deposited by water almost free from other impurities, for the winds would have mingled other dust with it."

M. E. WADSWORTH.

Museum of comparative zoölogy,
Cambridge, Mass., July 9.