noticed the same formation at this station upon the anemoscope and anemometer. I would like to inquire whether the Mount Washington formation is really snow driven against the pole by the gale, or, as at this station, an accumulation of fog in a frozen state. This formation I have never observed during snow-storms, even when accompanied by winds of sixty miles and upwards, but it is of frequent occurrence when a heavy cloud envelops the peak.

T. W. SHERWOOD,
Sig. corps, U.S.A.

Pikes Peak, Col., April 15.

Quaternary volcanic deposits in Nebraska.

It was the good fortune of the writer to discover the following significant section during the last holiday vacation. It is in one of the abrupt bluffs overlooking a sharp bend of the West Blue River, in the southern part of Seward county, Neb. It exhibits the formations from nearly the general level down to the level of the stream. It is as follows: 2 ± feet soil; passing into 6 ± feet red gritty loam; 9 ± feet stratified loamy clay, with thin streaks of small white quartz pebbles; passing into 3 ± feet mostly gravel, with a few bowlders of red quartzite from Dakota; passing into 15 ± feet stratified loamy clay with streaks of pebbles; 6 to 10 inches of light gray earth, volcanic ashes, thinly and evenly laminated; 1½ feet clay, darker above; below passing into 5 feet fine gray sand, with thin clay laminae 6 to 12 inches apart; 1 ± foot coarse sand with pebbles and bowlders of red quartzite, — greenstone, — granite, etc., with an uneven surface below; 6 feet hard greenish joint clay; 8 feet slope; water of the West Blue River.

A few rods distant a less complete but similar section shows the siliceous layer five feet thick, and it appears along the sides of a ravine at different places for several rods, showing considerable persistency. Specimens of it have been submitted to Mr. J. S. Diller of the U. S. geological survey, with another sample from Knox county. He replies, "Specimens No. 1 (Knox county) and No. 2 (Seward county) are volcanic dust. They are composed chiefly of minute angular fragments of pumiceous glass, such as is thrown high into the air during violent eruptions, and wafted by currents of air for hundreds of miles away from its source. The fragments of glass are, for the most part, clear and transparent, with few traces of crystalline matter. Besides the volcanic glass, there are numerous grains of quartz sand, which are well rounded. . . . As nearly as I can estimate, from the small quantity examined, more than ninety per cent of the whole is volcanic dust. It appears that the material is of complex origin. While there is no doubt that the volcanic dust was borne by winds nearly or quite to its destination, the rounded grains appear to be of aqueous origin, and suggest that the dust may have fallen in a body of water, where the two commingled."

Several important conclusions seem well-nigh demonstrated by this section.

1. The occurrence of important volcanic action somewhere in this region during the quaternary. The red quartzite could not have arrived in this locality before the glacial epoch. If the section eventually proves to be of a local formation, which does not seem likely, it would only make the deposition of the dust more recent.

2. The character of the siliceous deposit strongly supports the conclusion that it was dropped in a deep or quiet lake. This accords well with the deposits above and below; for the bowldery layers are, for evident reasons, referred to floating ice, and the character of stratification favors lacustrine rather than fluviatile conditions: hence we are led to believe that this lake was contemporaneous with the ice-sheet which occupied the regions of Dakota and Iowa. We catch a glimpse of the joint action of frost and fire on our western plains.

3. From the location of the section, and its relation to the White River tertiary sands, which, if rightly identified, are widely exposed east of this point, it appears not unlikely that this lake was but the diminished stage of King's Lake Cheyenne. Numerous finds of these siliceous beds have been reported from the republican valley, and one as far east as Oak Creek, Lancaster county. They probably belong to this same geological horizon.

J. E. TODD.

Tabor, Io., March 20.

World time.

The last number of *Nature* contains a lecture by Mr. Christie, the astronomer royal of England, on universal or world time. With Mr. Christie's principal conclusion I fully agree, but have not much faith in some of his arguments, or in some of the results he predicts.

Mr. Christie bases one of his arguments on the ignorance of farmers, and infers, that, because the farmer cannot tell a difference of half an hour in his time, we may therefore make this difference four, five, or ten hours. But would the farmer be any better off if he should tell his wife that he wants breakfast at sixteen, seventeen, or twenty-two o'clock? Of course not. And it is not wise, I think, to base any permanent action on the ignorance of any class of men. Conditions may change; and such arguments, though they may answer for a political or military campaign, are easily overdone, and must be looked upon as only temporary.

The most vicious assumption that underlies Mr. Christie's argument, and which he has in common with some other astronomers, is this: he assumes that man was made for railroads and telegraphs, and not that these things are for man. My natural assumption would be that the chief astronomer of a great country would have a wider view of things. But we all know the liberality and influence of our great corporations, and how they deal out free wires and free service; and we have all felt this on the reception of a free telegraphic despatch when we come to the last letters, *D. H.*

Now, I say with Mr. Christie, let the railroads adopt a world time, and it does not matter what meridian they take, though Greenwich is probably the best, and let all their trains be run on this time. Then, directly opposite to Mr. Christie's proposition, let all the cities, villages, and farmers return to their local and natural time. If the railroads will do this, the most ignorant farmer will soon understand matters. I speak with confidence, because forty years ago I was a farmer myself, and very ignorant. There has been too much confusion given to this matter, and our astronomers have been too eager to sell time. They have better work to do.

ASAPH HALL.