

optical delusion." If the boundary-lines of beds 15 and 20 feet thick can be distinguished separately, local deflections from the horizontal even to that amount should be visible too. Nor is the fact that they are only "nearly horizontal" worthy of any weight. Their dip is about 1° westward. They have been spoken of¹ as "with their strata so little inclined that these can be traced by the eye in long horizontal bars on the side of the steeper declivities." But while holding by what I have affirmed on the subject, I am sensible that Mr. Judd's objections can be obviated only by an authority equal to his own.

WARR-ON-TYNE, Nov. 14th.

HUGH MILLER.

"THE CLIMATE CONTROVERSY."

SIR,—Will you allow me to call the attention of geologists interested in this subject to a statement made by Sir George Nares to the Geographical Society.

He tells us that in the extreme north of Greenland, as well as on the opposite side of Smith's Sound, instead of the land being enveloped in ice like the more southern parts of Greenland, *the glaciers do not reach the sea*. This Sir George attributes to the snowfall being less than the summer sun can dissolve, the snow-bearing clouds discharging their contents principally in latitudes further south, and the land-ice being made up of undissolved snow.

Now does not this militate against the possibility of a polar ice-cap, as well as against the alleged cumulative tendency of snow and ice over any large portion of the polar areas? If with the present lower excentricity the aphelion sun of the northern summer is sufficient to dissolve the winter snow in latitude 82° , would not the perihelion sun of a high excentricity be proportionately more effective, instead, as Mr. Croll contends, of being insufficient to prevent the accumulation of snow? During the augmented cold of the Glacial period would not the region of excessive snowfall have been pushed down to about lat. 55° in Europe (where we find evidences of the enveloping land-ice), and the chief part of Greenland, instead of, as now, being enveloped in ice, have been in the ice-free condition of the land about Smith's Sound? And since the cold of that region, notwithstanding this absence of land-ice, was found to be more intense than that of latitudes where the ice envelops the land, may not the cold of the Glacial period have been proportionately more intense without any greater snow accumulation than now prevails?

SEARLES V. WOOD, JUN.

OBITUARY.

ELKANAH BILLINGS, F.G.S.

BORN 1820, DIED 1876. AGED 56 YEARS.

THE late Mr. Billings was born in the Township of Gloucester, near Ottawa, Ontario, on the 5th of May, 1820. His family came originally from Wales, and settled in the New England States, but subsequently removed to Canada. Mr. Billings was educated partly

¹ Prof. Geikie's *Scenery of Scotland*, p. 211.