

weather. In a letter dated July 1st, 1898, Dr. C. Weber, of Bremen, Germany, a distinguished authority on Peat-bogs, gives me an entirely different, and doubtless correct, explanation of the phenomenon which he illustrates by the accompanying figure (Fig. 4). He shows that it



FIG. 4. Diagram of rays over a raised peat bog in dark and bright weather. Hochmoor = raised bog: B = its highest part. Stärker erwärmte Luftschicht = more strongly warmed layer of air.

is an optical illusion, caused as follows: if in dull weather, the eye of an observer standing near the margin of the bog (*i. e.*, C. in Fig. 4), be at such a height that the top of some object on the opposite margin is just visible, (*i. e.*, A) the ray from one to the other will be straight. If now, the sun appears, the layer of air in contact with the bog will become more strongly warmed than the layers above it, and hence it will become rarified and less refractive. When the ray from the object reaches this layer, it passes into a less dense medium and hence bends from the perpendicular, *i. e.*, away from the surface of the bog (*i. e.* from *b* to E). In issuing from this layer, it re-enters the denser layer, and hence it will be bent towards the perpendicular, and therefore still farther upward from the surface (*i. e.*, from E to F). Consequently the ray will pass over the head of the observer (to F), who, finding it necessary to rise vertically some inches to again see the object, naturally thinks the bog itself has risen.

29.—ON THE PHYSIOGRAPHY OF THE NICTOR LAKE REGION.

(Read December 5th, 1899).

At the eastern head of the Tobique River, in the north of the New Brunswick Highlands, lies Nictor, fairest of New Brunswick lakes. It is absolutely wild, unvisited save by an occasional sportsman or naturalist, and may be reached only by a several-days' canoe journey. It is unsurveyed, wrongly mapped, and scientifically little known. For these reasons, the following observations, made during two visits