J. Milne-Ice and Ice-work in Newfoundland.

which, as was shown by Jukes, may in part account for the tendencies of the other features, have all been shown to trend from about 27° E. of North to 27° W. of South.

These curious coincidences were in part explained by supposing Newfoundland as a rising area submerged 3000 feet beneath its present level, and some denuding agent like the present Arctio current with its load of icebergs passing over it. This theory, I believe, is looked upon as being considerably strengthened by observations over a large part of North-east America. With regard to the Newfoundland portion of the Western Continent, I wish to show that it is not so clearly to be demonstrated.

After watching several icebergs grounding, it appears to me that they would tend to give anything but a parallelism in their abrading action.

An iceberg aground slowly lurches and rolls, and turns from side to side, as it is differently affected by the wind, the tide, or a current, evidently tearing up and grinding in several directions the strata on which it rests.

To conceive the method in which icebergs acted to form the "parallelism of features," as seen in Newfoundland, a picture must be drawn, which I am afraid will hardly be taken as the true one. As the island rises, the lines of valleys and of the hills have been formed, and along these troughs, and by the ridges, the icebergs pass. This initial direction may, amongst other causes, be due to the configuration of pre-existing land, to the general direction in which detrial matter is strewn by an ocean current. Whilst the land is still beneath the surface of the water, we must imagine these huge islands of ice tripping along from hill-top to hill-top, sometimes just grazing the sides of a submerged valley, and sometimes scouring the surface of a hill, like butterflies before a breeze which try to stop at every tempting flower.

That they may have scattered the boulders which are to be found in most parts covering Newfoundland does not appear to be so great an impossibility as that they were the originators of the parallelisms; but even these, from the observations made by myself and my companion, the late Mr. T. G. B. Lloyd, F.G.S., during the summer of 1874, it appears to me that they might be ascribed to another origin.

Ice-Marks in Newfoundland.—On the eastern coast of Newfoundland, from the extreme South to Kirpon on the North, a distance of 300 miles, boulders and other indications of ice-action are to be seen in most parts: reference to them has been made in the Quart. Journ. Geol. Soc., London, 1874, vol. xxx., p. 725. Near St. John's, icegrooves and scratches are to be seen up to considerable heights, whilst drift with well-marked stones cover the country. The narrow neck of land that separates the Bays of Trinity and Placentia affords considerable evidence of ice-work. Standing on the water-parting which divides the streams into one of these bays from those entering the other, the contour of the country, which is typical of many other parts of Newfoundland, may easily be viewed. All around is a rough brown surface of berry-bearing bushes and stanted spruce,

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