

differ from those of Sweden, Russia, Wales, or even Canada. On the other hand, quite a marked difference is found between them and the Silurian rocks of Bohemia and Southern Europe, making evident the fact that some barrier must have separated the northern Silurian sea from the southern. The world must have been very unaccentuated in that age. The same steamy, tropical climate reigned at the Poles as at the Equator summer and winter. The small, unformed lands showed but slight differences of level, and seemed to have been monotonous voids, without birds or beasts or flowers. All seas so far as known were shallow, and the sluggish inhabitants showed little of the vigour and variety of the present.

The city of Christiania, the capital of Norway, is a petrographer's paradise, for splendid granites, syenites, porphyries, diorites, and diabases are all found within three or four miles. Where the city now sits peacefully on her hills, overlooking distant mountains, rugged shores, and charming islands, there was once most terrific volcanic action. There were muttered thunders that came not from storm clouds, but from the uneasy earth—mysterious warnings and premonitory shudderings. Vast cracks and chasms opened in the trembling rocks, into which welled molten fluids. Lava flowed from broad openings, and showers of ashes darkened the sun and desolated the country, while through the stifling down-pour came baleful gleams of red light reflected from lakes of fire below. The whole region was blasted again and again through successive geological ages, just as half Iceland has been turned into a desert in modern times by Hecla and Skaptar Jokul. The eruptive forces, terrible as their effects are at the time, do a most necessary work in raising lands above the ocean, but it is only on the border lands by the sea. In the interior of continents elevating forces of a slower, less revolutionary kind fulfil the same office, the tendency in either case being to begin at the north and shift southward. The volcanic powers that convulsed Norway, in time found the existing rocks too strong, and transferred their work to Central Europe towards the end of the coal period, forming the porphyry and melaphyre mountains of Bohemia and Silesia. Once more the resistance was found too great, and there was a shifting south to lift the trachyte domes of Hungary and the Auvergne in tertiary times. In our day vulcanism finds its home by the Mediterranean and torments Southern Italy and the Grecian Isles.

In no land in Europe have ice and snow played so important a part as in Norway, and one may truthfully say that the ice age still lingers in no small part of the territory, so that the action of