

winter snow not only protects evergreen plants from those sudden alternations of temperature which are more destructive than intense frost, and prevents the frost from penetrating to their roots, but, by the ammonia which it absorbs, preserves their greenness. According to Dr. Brown, the Danish ladies of Disco long ago solved this problem.* He informs us that they cultivate in their houses most of our garden flowers—as roses, fuchsias, and geraniums—showing that it is merely warmth and not light that is required to enable a subtropical flora to thrive in Greenland. Even in Canada, which has a flora richer in some respects than that of temperate Europe, growth is effectually arrested by cold for nearly six months, and though there is ample sunlight there is no vegetation. It is, indeed, not impossible that in the plans of the Creator the continuous summer sun of the arctic regions may have been made the means for the introduction, or at least for the rapid growth and multiplication, of new and more varied types of plants.

Much, of course, remains to be known of the history of the old floras, whose fortunes I have endeavoured to sketch, and which seem to have been driven like shuttle-cocks from north to south, and from south to north, especially on the American continent, whose meridional extension seems to have given a field specially suited for such operations.

This great stretch of the western continent, from north to south, is also connected with the interesting fact that, when new floras are entering from the arctic regions, they appear earlier in America than in Europe, and that in times when old floras are retreating from the south old genera and species linger longer in America. Thus, in the Devonian and Cretaceous new forms of those periods appear in America long before they are recognized

* "Florula Discoana," Botanical Society of Edinburgh, 1868.