

to that of the coal period is that of warm, temperate regions in the southern hemisphere. It is not properly a tropical flora, nor is it the flora of a cold region, but rather indicative of a moist and equable climate. Still,

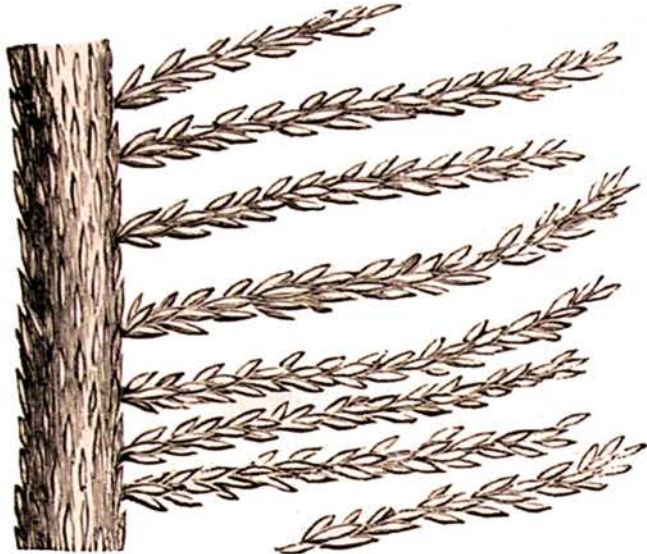


FIG. 63.—*Walchia imbricatula*, S. N., Permian, Prince Edward Island.

we must bear in mind that we may often be mistaken in reasoning as to the temperature required by extinct species of plants, differing from those now in existence. Further, we must not assume that the climatal conditions of the northern hemisphere were in the coal period at all similar to those which now prevail. As Sir Charles Lyell has shown, a less amount of land in the higher latitudes would greatly modify climates, and there is every reason to believe that in the coal period there was less land than now. Further, it has been shown by Tyndall that a very small additional amount of carbonic acid in the atmosphere would, by obstructing the radiation of heat from the earth, produce almost the effect of a glass roof or conservatory, extending over the whole world. Again, there is much in the structure of the leaves of the coal-plants, as well as in the vast amount of carbon which they accumulated in the form of coal, and the characteristics of the animal life of the period, to indicate, on independent