

as I conceive, the means of fully deciding what were the conditions in the central and south-western part of our continent."

"These facts, the result of so many observations, and coincident over so vast an area in the west, confirm conclusions drawn from other sources, that the dry land and land plants first appeared in the eastern part of the continent. Indeed we have good reason to believe that dry land existed in proximity to our present continent on the east from the earliest geological time, as shown in the vast accumulation of materials in the Laurentian and Huronian periods.

"The Potsdam sandstone, it is true, seems to be almost equally spread out over the entire breadth of the country, from the slopes of the Rocky Mountains, to the Atlantic; and judging from its augmenting thickness in many western localities, we may expect to find it, either in its normal condition or as a metamorphic rock, strongly developed in some parts of the Rocky Mountains. Subsequent to this period, however, every sedimentary formation indicates the proximity of land on the east. The great thickness of strata, coarse materials, and numerous fucoids of the Hudson River group in its eastern extension, indicate proximity to land, or the course of strong currents; while in the west the formation dies out in some inconspicuous fine shaly and calcareous beds, which, both in the nature and condition of the material and in the fossil contents, indicate great distance from land and a quiet ocean. The Clinton group, in like manner, in its coarse materials and abundant fucoids, points to a littoral condition of its area of deposition in the east; while it gradually diminishes in its western extension, and is finally altogether lost in that direction.

"In the sedimentary rocks of the Devonian period, including the Hamilton, Portage, Chemung and Catskill Mountain groups, we find in Canada and Eastern New York the first appearance of land plants, some of which closely resemble plants of the Coal period; and it was at that time that this peculiar vegetation began its existence on this continent, where we now find its remains in strata of these several groups.

"Notwithstanding this great accumulation of land-derived material with its marine shells, gradually decreasing westward as calcareous deposits increase—its numerous fucoids and land plants, the whole series has diminished to less than two hundred feet of marine sedimentary deposits in the Mississippi valley, and is there marked by marine fossils only.