nature. Even then we shall perhaps be able to comprehend only the means by which, after specific types have been created, they may, by the culture of their Maker, be "sported" into new varieties or subspecies, and thus fitted to exist under different conditions or to occupy higher places in the economy of nature.

Before venturing on such extreme speculations as some now current on questions of this kind, we would require to know the successive extinct floras as perfectly as those of the modern world, and to be able to ascertain to what extent each species can change either spontaneously or under the influence of struggle for existence or expansion under favourable conditions, and under arctic semi-annual days and nights, or the shorter days of the tropics. Such knowledge, if ever acquired, it may take ages of investigation to accumulate.

As to the origin and mode of introduction of successive floras, I am, for the reasons above stated, not disposed to dogmatise, or to adopt as final any existing theory of the development of the vegetable kingdom. Still, some laws regulating the progress of vegetable life may be recognised, and I propose to state these in connection with the Palæozoic floras, to which my own studies have chiefly related.

Fossil plants are almost proverbially uncertain with reference to their accurate determination, and have been regarded as of comparatively little utility in the decision of general questions of palæontology. This results principally from the fragmentary condition in which they have been studied, and from the fact that fragments of animal structures are more definite and instructive than corresponding portions of plants.

It is to be observed, however, that our knowledge of fossil plants becomes accurate in proportion to the extent to which we can carry the study of specimens in the beds in which they are preserved, so as to examine more per-

http://geology.19thcenturyscience.org/books/1888-Dawson-Plants/README.htm