

either the plants of two distinct beds, one Lower Carboniferous and the other Upper Devonian, have been near to or in contact with each other and have been intermixed, or else that in this high northern latitude, in which (for reasons stated in my "Report on the Devonian Flora"*) I believe the Devonian plants to have originated, there was an actual intermixture of the two floras. In America, at the base of the Carboniferous of Ohio, a transition of this kind seems to occur; but elsewhere in northeastern America the Lower Carboniferous plants are usually unmixed with the Devonian.

Dr. Heer, however, proceeds to identify these plants with those of the American Chemung, and even with those of the Middle Devonian of New Brunswick, as described by me—a conclusion from which I must altogether dissent, inasmuch as the latter belong to beds which were disturbed and partially metamorphosed before the deposition of the lowest Carboniferous or "Subcarboniferous" beds.

Dr. Heer's error seems to have arisen from want of acquaintance with the rich flora of the Middle Devonian, which, while differing in species, has much resemblance in its general facies, and especially in its richness in ferns, to that of the coal-formation.

To geologists acquainted with the stratigraphy and the accompanying animal fossils, Dr. Heer's conclusions will of course appear untenable; but they may regard them as invalidating the evidence of fossil plants; and for this reason it is, I think, desirable to give publicity to the above statements.

I consider the British equivalent of the lower coal-measures of eastern America to be the lower limestone shales, the *Tweedian group* of Mr. Tate (1858), but which have sometimes been called the "Calciferos Sandstone" (a name preoccupied for a Cambrian group in America). This group does not constitute "beds of passage" to the Devonian, more especially in eastern America, where the lower coal-formation rests unconformably on the Devonian, and is broadly distinguished by its fossils.

The above notes would not have been extended to so great length, but for the importance of the Erian flora as the precursor of that of the Carboniferous, and the small amount of attention hitherto given to it by geologists and botanists.

* "Geological Survey of Canada," 1871.