

be inferred from the vegetation, this in the northern hemisphere presented a greater expanse of swampy flats little elevated above the sea than we find in any other period. As to the southern hemisphere, less is known, but the conditions of vegetation would seem to have been essentially the same.

Taking the southern hemisphere as a whole, I have not seen any evidence of a Lower Devonian or Upper Silurian flora; but in South Africa and Australia there are remains of Upper Devonian or Lower Carboniferous plants. These were succeeded by a remarkable Upper Carboniferous or Permian group, which spread itself all over India, Australia, and South Africa,* and contains some forms (*Vertebraria*, *Phyllothea*, *Glossopteris*, &c.) not found in rocks of similar age in the northern hemisphere, so that, if the age of these beds has been correctly determined, the southern hemisphere was in advance in relation to some genera of plants. This, however, is to be expected when we consider that the Triassic and Jurassic flora of the north contains or consists of intruders from more southern sites. These beds are succeeded in India by others holding cycads, &c., of Upper Jurassic or Lower Cretaceous types (Rajmahal and Jabalpur groups).

Blanford has shown that there is a very great similarity in this series all over the Australian and Indian region.† Hartt and Darby have in like manner distinguished Devonian and Carboniferous forms in Brazil akin to those of the northern hemisphere. Thus the southern hemisphere would seem to have kept pace with the northern, and according to Blanford there is evidence there of cold conditions in the Permian, separating the Palæozoic

* Wyley, "Journal Geol. Society," vol. xxiii., p. 172; Daintree, *ibid.*, vol. xxviii.; also Clarke and McCoy.

† "Journal Geol. Society," vol. xxxi.