

tant climatal changes must also occur. On the re-emergence of the land such of these species as remained would again extend themselves over their former areas of distribution, in so far as the new climatal and other conditions would permit. We would naturally suppose that the first of the above processes would tend to the elimination of varieties, the second, to their increase; but, on the other hand, the breaking up of a continental flora into that of distinct islets, and the crowding together of many forms, might be a process fertile in the production of some varieties if fatal to others.

Further, it is possible that these changes of subsidence may have some connection with the introduction, as well as with the extinction, even of specific types. It is certain, at least, in the case of land-plants, that such types come in most plentifully immediately after elevation, though they are most abundantly preserved in periods of slow subsidence. I do not mean, however, that this connection is one of cause and effect; there are, indeed, indications that it is not so. One of these is, that in some cases the enlargement of the area of the land seems to be as injurious to terrestrial species as its diminution.

9. Another point on which I have already insisted, and which has been found to apply to the Tertiary as well as to the Palæozoic floras, is the appearance of new types within the arctic and boreal areas, and their migration southward. Periods in which the existence of northern land coincided with a general warm temperature of the northern hemisphere seem to have been those most favourable to the introduction of new forms of land-plants. Hence, there has been throughout geological time a general movement of new floras from the Palæarctic and Nearctic regions to the southward.

Applying the above considerations to the Erian and Carboniferous floras of North America, we obtain some data which may guide us in arriving at general conclu-