

plants, but not identical with the plants of the Coal Measures.* In Scotland, the formation is richly fossiliferous, and the remains belong chiefly to the animal kingdom. It is richly fossiliferous, too, in Russia, where it was discovered by Mr. Murchison, during the summer of last year, spread over areas many thousand square miles in extent. And there, as in Scotland, the *Holoptychius* seems its most characteristic fossil.

The fact seems especially worthy of remark. The organisms of some of the newer formations differ entirely, in widely separated localities, from their contemporary organisms, just as, in the existing state of things, the plants and animals of Great Britain differ from the plants and animals of Lapland or of Sierra Leone. A geologist who has acquainted himself with the belemnites, baculites, turrilites, and sea-urchins of the Cretaceous group in England and the north of France, would discover that he had got into an entirely new field among the hippurites, sphærulites, and nummulites of the same formations, in Greece, Italy, and Spain; nor, in passing the tertiary deposits, would he find less striking dissimilarities between the gigantic, mail-clad megatherium and huge mastodon of the Ohio and the La Plate, and the monsters, their contemporaries, the hairy mammoth of Siberia, and the hippopotamus and rhinoceros of England and the Continent. In the more ancient geological periods, ere the seasons began, the case is essentially different; the contemporary formations, when widely separated, are often very unlike in mineralogical character, but in their fossil contents they are almost always identical. In these earlier ages, the atmospheric temperature seems to have depended more on the internal heat of the earth, only partially cooled down from its original state, than on the earth's configuration or the influence of the sun. Hence a widely spread equality of

* See Note K.