

rated by a thousand miles of apparently impassable country from its northern haunts. It no doubt extended itself over the intervening plains at a time when Europe was colder than at present. Another curious case, which has evidently much interested Mr. Wallace, since he gives a special map to its illustration, is that of the marsh-tit of Europe. This little bird is found throughout south-western Europe. It reappears in China, but is not known anywhere between. In Siberia and northern Europe there is, however, a species or distinct race which connects these isolated patches. In this case, if the Siberian species is truly distinct, we have a remarkable case of isolation and of the permanence of identical characters for a long time, for in that case this bird must be a survivor of the Pliocene or Miocene time. On the other hand, if, as is perhaps more likely, the marsh-tit is only a local variety of the Siberian species, we have an illustration of the local recurrence of this form when the conditions are favorable, even tho separated by a great space and long time.

The study of fossils gives us the true meaning of such facts, and causes us to cease to wonder at any case of local repetition of species, however widely separated. The "big trees" of California constitute a remarkable example. There are at present two very distinct species of these trees, both found only in limited areas of the western part of North America. Fossil trees of the same genus (*Sequoia*) occur as far back as the Cretaceous age; but in this age no less than ten species are known, and there were probably more. Nor are they confined to America, but occur in various parts of the Eurasian continent as well. Two of the Lower Cretaceous species are so near to the two modern ones that even an unbeliever in evolution may suppose them to be possible ancestors; the remaining eight are distinct, but some of them intermediate in their characters. In the Tertiary period, intervening between the Cretaceous and the modern, fourteen species of *Sequoia* are believed to have been recognized, and they appear to have existed abundantly all over the northern hemisphere. Thus we know that these remarkable Californian giants are the last remnant of a once widely distributed genus, originating, so far as known, in the Cretaceous age. Now had a grove of *Sequoias*, however small, survived anywhere in Europe