

tween that outer region and the basin of Bohemia. During these intervals, a greater or less number of immigrants succeeded in making their way into the Bohemian area, but as the conditions for their prolonged continuance there were not yet favorable, they soon died out, and the normal fauna of the region resumed its occupancy. The deposits formed during these partial interruptions, notably graptolitic schists and calcareous bands, accompanied by igneous sheets, contain, besides the invading species, remains of some of the indigenous forms. Eventually, however, on the final extinction of the second fauna, and, we may suppose, on the ultimate demolition of the physical barriers hitherto only occasionally and temporarily broken, the third fauna, which had already sent successive colonies into the Bohemian area, now swarmed into it, and peopled it till the close of the Silurian period.¹¹²

The general verdict of palæontologists has been adverse to this original and ingenious doctrine. The apparent intercalation of younger zones in older groups of rock has been accounted for by such infoldings of strata as have already been described in this work and by the effects of faults. It has been shown that not only are the zones repeated, but that when they reappear they bring with them their minute palæontological subdivisions and their peculiar lithological characters.¹¹³

Silurian rocks appear in a few detached areas in Germany, but the only comparatively large tract of them occurs in Thuringia and the Fichtelgebirge. They present a great contrast to those of Bohemia in their comparatively unfossiliferous character, and the absence of any one continuous succession of the whole Silurian system. In the Thuringer Wald, a series of fucoidal-slates (perhaps Cambrian) passes up into slates, graywackes, etc., with *Lingula*, *Discina*, *Calymene*, numerous graptolites and other fossils. These strata (from 1600 to 2000 feet thick) may represent the Lower Silurian groups. They are covered by some graptolitic alum-slates, shales, flinty slates, and limestones (*Favosites gotlandica*, *Cardiola interrupta*, *Tentaculites acurius*, etc.), which no doubt represent the Upper Silurian

¹¹² The doctrine of colonies is developed in the "Système Silurien du Centre de la Bohême," 1852, i. p. 73; "Colonies dans le Bassin Silurien de la Bohême," in Bull. Soc. Geol. France (2d ser.) xvii. 1859, p. 602; "Defense des Colonies," Prague, i. 1861, ii. 1862, iii. 1865, iv. 1870, v. 1881.

¹¹³ See J. E. Marr, Q. J. Geol. Soc. 1880, p. 605; 1882, p. 313.