

sufficient degree of warmth and of rainfall to make agriculture easy and profitable, but not enough to be enervating; that the winters shall be cool enough to be bracing, but not deadening; and that the relation of summer and winter shall be such that with forethought every man can support himself and his family in comfort the year round, while without forethought he and his will suffer seriously. Comparatively clear, dry air and high barometric pressure appear to be subsidiary conditions favorable to human progress.

The evidence of climatic changes which we have found in the Old World seems to render it probable that these conditions have prevailed in each of the great countries of history at the time when it has risen to the highest degree of civilization and power. Therefore we may conclude that long-continuing changes of climate have been one of the controlling causes of the rise and fall of the great nations of the world. The Dark Ages, at first sight, do not seem to correspond to this conclusion. Climatic conditions, according to our hypothesis, were much like those of to-day. Accordingly, we should expect to find rapid progress of civilization in northern Europe. The discrepancy is easily explained. At the beginning of the Christian era, the vast plains of Central Asia appear to have supported untold hordes of nomads. When the plains began to grow rapidly drier, the inhabitants must have suffered sorely. According to Hahn, a rainfall of twenty inches a year in New South Wales makes it possible to keep over six hundred sheep on a square mile of land; with a rainfall of thirteen inches only about a hundred can be kept; and with ten inches only ten sheep. During the short space of a thirty-six-year cycle,