

Hence we observe that, while toward the northwest the Triassic rocks attain a maximum depth of 5200 feet, they rapidly come down to a fifth or sixth of that thickness as they pass toward the southeast. Southwestward, however, they swell out in Devon and Somerset to probably not less than 2500 or 3000 feet.<sup>8</sup> Recent borings in the southeastern counties show the Trias to be there generally absent.<sup>9</sup> The main source of supply of the sediment which formed the material of the Triassic deposits probably lay toward the north or northwest. The pebble-beds, besides local materials, contain abundant rolled pebbles of quartz, which have evidently been derived from some previous conglomerate, probably from some of the Old Red Sandstone masses now removed or concealed. The Trias rests with a more or less decided unconformability on the rocks underneath it, so that, although the general physical conditions as regards climate, geography, and sedimentation, which prevailed in the Permian period, still continued, terrestrial movements had, in the meanwhile, taken place, whereby the Permian sediments were generally upraised and exposed to denudation. Hence the Trias rests now on Permian, now on Carboniferous, and sometimes even on Cambrian rocks. Moreover, the upper parts of the Triassic series overlap the lower, so that the Keuper groups repose successively on Permian and Carboniferous rocks.

The Bunter series is singularly devoid of organic remains. The rolled fragments in the pebble-beds have yielded fossils at Budleigh Salterton, on the southern coast of Devonshire, proving that Silurian and Devonian rocks were exposed within the area from which the materials of these strata were derived. The peculiar quartzites of the Budleigh Salterton pebbles do not seem to have come from any British rocks now visible, but rather to have been derived from the northwest of France.<sup>10</sup> A marked characteristic of the Bunter series in central England is its capacity for holding water, whence it is an important source of water-supply.

At the base of the Keuper series, in the region of the

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<sup>8</sup> Ussher, *Q. J. Geol. Soc.* xxxii. 392.

<sup>9</sup> Red strata in the deep boring at Richmond are believed by Prof. Judd to be Triassic. Mr. Whitaker regards as Trias similar rocks found under Kentish Town and Crossness near London.

<sup>10</sup> For an account of their included fossils see Davidson, *Palæontograph. Soc.* 1881.