

of Ross-shire, where the Old Red Sandstone leans at a high angle against the prevailing Quartz Rock of the district, to where, on the southern skirts of Mid-Lothian, the Mountain Limestone rises amid the coal. I have resided one season on a raised beach of the Moray Frith. I have spent the season immediately following amid the ancient granites and contorted schists of the central Highlands. In the north I have laid open by thousands the shells and lignites of the Oolite; in the south I have disinterred from their matrices of stone or of shale the huge reeds and tree ferns of the Carboniferous period. I have been taught by experience, too, how necessary an acquaintance with geology of both extremes of the kingdom is to the right understanding of the formations of either. In the north, there occurs a vast gap in the scale. The Lias leans unconformably against the Old Red Sandstone; there is no Mountain Limestone, no Coal Measures, none of the New Red Marls or Sandstones, Under or Upper. There are at least three entire systems omitted. But the upper portion of the scale is well nigh complete. In one locality we may pass from the Lower to the Upper Lias, in another from the Inferior to the Great Oolite, and onward to the Oxford Clay and the Coral Rag. We may explore, in a third locality, beds identical in their organisms with the Wealden of Sussex. In a fourth we find the flints and fossils of the Chalk. The lower part of the scale is also well nigh complete. The Old Red Sandstone is amply developed in Moray Caithness, and Ross; and the Grauwacke, in its more ancient unfossiliferous type, rather extensively in Banffshire. But to acquaint one's self with the three missing formations, — to complete one's knowledge of the entire scale by filling up the hiatus, — it is necessary to remove to the south. The geology of the Lothians is the geology of at least two thirds