

and the base of the system, but none in the north beneath that of the Coccosteus and its base. In the north we find the *room* lying above between the Coccostean and Holoptychian formations, and represented by that great unfossiliferous deposit of pale sandstone to which the hills of Hoy and the rocks of Duncansbay Head and of Tarbet Ness belong. Further, in the second place, while the upper or Holoptychian formation is found *directly* overlying that of the Coccosteus in only one locality,—Moray,—we find it directly overlying that of the Cephalaspis in *two* widely-separated localities ;—in the vast band of Old Red which runs diagonally across the island from sea to sea, parallel to the Grampian chain, and in the immensely developed Red Sandstones of England and Wales. And it is, of course, more probable that the two corroborative instances should represent the natural succession of the formations, and the single instance the accidental gap in the scale consequent on the missing formation, than that, *vice versa*, the solitary instance should represent the natural succession, while the two mutually corroborative ones should represent, in localities widely apart, the mere accident of the gap. But, in the third place, I attach more weight to a conclusion founded on the positive character of the groupes of organic remains by which the three great formations of the Old Red system are characterized, than I do to either of these considerations. The organisms of the Cephalaspian deposits differ *generically*, and in their whole aspect, from both those of the Coccostean and Holoptychian formations ; whereas the organisms of the Coccostean formations, while they resemble generically and in the group those of the Holoptychian one, mainly differ from them *specifically*. The extreme *generic* difference in the one case argues evidently a great difference in *condition*,—the lesser specific difference in the other, a great difference in *point of time*. The Cephalaspian formation might, as a fresh-