must have been deposited in a sea inhabited by the Coccosteus and Diplacanthus. It is demonstrable that, while yet in the recent state, a Diplacanthus lay down and died beside it; and the evidence in the case is unequivocally this, that, in the oldest portion of the oldest terrestrial flora yet known, there occurs the fragment of a tree quite as high in the scale as the stately Norfolk Island pine, or the noble cedar of Lebanon.

I have failed hitherto in finding any remains of terrestrial plant-covered surfaces in the Old Red Sandstone of Scotland, though decided traces of desiccated sub-aerial ones are not rare. Shallows and banks seem to have been numerous during the period of at least the Lower formation. The flagstones of Caithness and Orkney, and the argillaceous fish-beds of Cromarty and Ross, not only abound in the ripple-marked surfaces of a shallow sea, but also in cracked and flawed planes that must have dried and split into polygonal partings in the air and the sun. The appearance of these in the neighbourhood of the town of Thurso, about half a mile to the east of the river, is not a little curious. Bearing throughout the general dingy hue of the flagstones, they yet consist of alternating beds of two distinct characters and qualities. The one kind, fissile, finely grained, and sharply ripple-marked, seems to have been deposited in shallow water; the other, not fissile, but, if I may so speak, felted together so as to yield with difficulty to the hammer in any direction, and traversed by polygonal partings, filled up usually by the substance of the overlying stratum, appears to have had a different origin. The state of keeping, too, in which the ichthyic remains of these alternating beds occur is always very different. The smaller and more delicately-organized fishes are never found entire, save in the fissile, finely-grained beds; in the others we detect only scattered fragments; and even these, unless they belonged to the robust