

with the exception of small nests of culm or anthracite. From the confusion that prevailed in the classification of these rocks previously to the labours of Messrs. Sedgwick and Murchison, the foreign geological localities of organic remains referred to these formations cannot be fully relied upon. In the lower slate system, fossils are of rare occurrence; and in its few species of fuci, corals, and shells, we see the last trace of organization, and arrive at the extreme limits of the animal and vegetable kingdoms of the ancient world.

7. METAMORPHIC CHARACTER OF SLATE, AND GREYWACKÉ.—The sedimentary nature of the Silurian system, is too obvious to admit of question; layers of shells, corals, crustacea, with remains of fishes, imbedded in mud, clay, and sand, together with coarse, water-worn materials, at once evince the origin and mode of formation of these strata. When dikes of basalt or trap traverse or intersect the limestones or shales, we find them indurated, and sometimes altogether changed in their lithological characters. In the slates, the lines of stratification are more or less manifest, and the rocks have a *cleavage*, that is, a tendency to split in directions which bear no relation to the lines of deposition, as I have already explained (page 700), but have clearly resulted from exposure to a high temperature, by which the character and arrangement of the constituent substance of the rock have been altered (Tabs. 139, 140); for a tendency to a