

simus, *Cornulites serpularius*, and *Trachyderma coriaceum*) are not uncommon. The crustacea are represented in the Upper Ludlow rock by ostracods (*Beyrichia Kloedeni*, *Leperditia marginata*, *Eutomis tuberosa*), phyllopoeds (*Ceratiocaris*, *Dictyocaris*), and more especially by eurypterids (*Eurypterus*, *Hemiaspis*, *Pterygotus*, *Slimonia*, *Stylonurus*, *Himantopterus*). The trilobites have still further waned in the Upper Ludlow rock, though *Homalonotus Knightii*, *Encrinurus punctatus*, *Phacops Downingia*, and a few others still occur, and even the persistent *Calymene Blumenbachii* may occasionally be found. Of the brachiopods, the most abundant forms in this group are *Lingula minima*, *L. lata*, *Discina rugata*, *Rhynchonella Wilsoni*, *Strophomena filosa*, and *Chonetes striatella*. The most characteristic lamellibranchs are *Orthonota amygdalina*, *Goniophora cymbæformis*, *Pterinea lineata*, *P. retroflexa*; some of the commonest gastropods are *Murchisonia corallii*, *Platyschisma helicites*, and *Holopella obsoleta*. The orthoceratites are specifically identical with those of the Lower Ludlow rock, and are sometimes of large size, *Orthoceras bullatum* being specially abundant. The fish-remains consist of bones, teeth, shagreen-like scales, plates, and fin-spines. They include some plagiostomous (placoid) forms (*Thelodus*), shagreen-scales (*Sphagodus*), and some ostracosteans, *Cephalaspis* (*C. ornatus*, *C. Murchisoni*), *Auchenaspis* (*A. Salteri*), *Pteraspis* (*P. Banksii*), *Scaphaspis* (*S. ludensis*), and *Eukeraspis* (*Plectrodus*) (*E. mirabilis*). Some of the spines described under the name of *Onchus* are probably crustacean.

(d) *Tilestones, Downton Castle Stone and Ledbury Shales.*—Above the Upper Ludlow shales and mudstones lies a group of fine yellow, red, and gray micaceous sandstones from 80 to 100 feet thick which have long been quarried at Downton Castle, Herefordshire. At Ledbury these sandstones are surmounted by a group of red, purple, and gray marls, shales, and thin sandstones, having a united thickness of nearly 300 feet. Originally the whole of these flaggy upper parts of the Ludlow group were called "Tilestones" by Murchison, and, being often red in color, were included by him as the base of the Old Red Sandstone, into which they gradually and conformably ascend. They point to a gradual change of physical conditions, which took place at the close of the Silurian period in the West of England and brought in the peculiar deposits of the Old Red Sandstone. There is every reason to believe that for a long time the marine sedimentation of Upper Silurian type continued to