

Characteristic Species.

1. **Upper Llandovery.** — *Petraia*, species of *Favosites*, *Heliolites*, *Syringopora*, *Halsites*, *Omphyma*, *Palæocyclus*, *Actinocrinus*, *Palæechinus*, *Tentaculites ornatus*, *Cornulites serpularius*, *Cælospira Scotica*, *Rhynchonella neglecta*, *Meristella angustifrons*, *Strophomena arenacea*, *S. compressa*, *Pentamerus oblongus*, *P. caudatus*, *Stricklandinia lens*, *S. lyrata*, *Orthis lata*, *O. calligramma*, *O. elegantula*, *Lyrodesma cuneatum*, *Pterinea sublævis*, *Murchisonia angulata*, *M. articulata*, *Cyclonema quadristriatum*, *Euomphalus alatus*, *Raphistoma lenticulare*, *Holopella obsoleta*, *Conularia*, *Calymene Blumenbachii*, *Encrinurus punctatus*, *Illænus Thomsoni*, *Proetus Stokesi*, *Phacops Stokesi*; also *Trinucleus concentricus*, *Lichas laxatus*, *Acidaspis*, etc.

2. **Wenlock Group.** — *Petraia bina*, *Cyathophyllum truncatum* Linn., *Favosites Gothlandicus*, *F. fibrosus*, *Halsites cateuulatus*, *H. interstinctus*, *Syringopora bifurcata*, *Cystiphyllum Siluriense* (Fig. 827), *Stenopora fibrosa*, *Ptilodictya scalpellum*, and many other Bryozoans; *Eucalyptocrinus decorus*, *Actinocrinus simplex*, *Crotalocrinus rugosus* (Fig. 828), *Marsupiocrinus cætatus*, *Atrypa reticularis*, *Orthis elegantula*, *Rhynchonella Wilsoni*, *R. nucula*, *Pentamerus galeatus*, *Leptæna rhomboidalis*, *Spirifer elevatus*, *S. sulcatus*, *Nucleospira pisum*, *Obolus Davidsoni*, *Turrilepas*, *Modiolopsis complanata*, *Conocardium æquicostatum*, *Pterinea retroflexa*, *Grammysia cingulata* (Fig. 830), *Orthoceras*, *Lituites*, *Actinoceras*, *Tentaculites ornatus*, *Acidaspis coronata*, *A. hamata*, *Calymene tuberculosa*, *Homalonotus delphinocephalus*, *Lichas Anglicus*, *Phacops caudata*, *Encrinurus variolaris*.

3. **Lower Ludlow.** — *Palæasterina primæva*, *Protaster Sedgwickii*, *P. hirudo*, *Omphyma turbinata*, *Rhynchonella Wilsoni*, *R. navicula*, *Cyrtia exporrecta*, *Spirifer crispus*, *Strophonella euglypha*, *Atrypa reticularis*, *Lingula lata*, *Pentamerus galeatus*, *Orthonota affinis*, *Lozonema sinuosum*, *Orthoceras Ludense*, *O. annulatum*, *Phragmoceras*, *Lituites giganteus*, *Calymene Blumenbachii*, *Phacops caudata*, *P. longicaudata*, *Proetus latifrons*, *Acidaspis Brightii*, *Lichas Anglicus*, *Homalonotus delphinocephalus*, *Cyphaspsis megalops*, *Hemiaspsis sperata*.

4. **Aymestry Limestone.** — *Tentaculites ornatus*, *Cyathophyllum truncatum*, *Pentamerus Knightii* (Fig. 829), *Atrypa reticularis*, *Rhynchonella Wilsoni*, *R. navicula*, *R. Stricklandi*, *Lingula Lewisii*, *L. lata*, *Strophonella euglypha*, *Meristella* (*Whitfieldella*) *didyma*, *Chonetes striatellus*, *Bellerophon dilatatus*, *B. trilobatus*, *Lituites giganteus*, *Orthoceras tenuiannulatum*, *Pterinea Sowerbyi*, *P. hians*, *Calymene Blumenbachii*, *Homalonotus delphinocephalus*, *Phacops caudata*.

5. **Upper Ludlow.** — *Lingula minima*, *L. lata*, *Orbiculoidea rugata*, *Atrypa reticularis*, *Rhynchonella Wilsoni*, *Orthis elegantula* var. *orbicularis*, *O. lunata*, *Stropheodonta filosa*, *Strophonella euglypha*, *Chonetes striatellus*, *C. latus*, *Orthonota angulifera*, *Platyschisma helicites*, *Holopella obsoleta*, *H. gregaria*, *H. conica*, *Cyclonema corallii*, *Murchisonia corallii*, *Bellerophon carinatus*, *Orthoceras bullatum*, *Homalonotus Knightii*, *Encrinurus punctatus*, *Phacops Downingii*, *Calymene Blumenbachii*, *Ceratiocaris*, *Dictyocaris*, *Entomis*, *Beyrichia*, *Leperditia*, *Eurypterus*, *Pterygotus bilobus* (Fig. 831), *Slimonia*, *Stylonurus*.

Fishes from the Lower Ludlow include only *Scaphaspis* (*Pteraspis*) *Ludensis*; from the Upper, mostly from the bone-bed, *Cephalaspis ornata*, *C. Murchisoni*, *Plectrodus mirabilis*, *P. pleiopristsis*, *Pteraspis Banksii*, *P. truncata*, *Scaphodus Ludensis*, *Thelodus parvidens*, *Thysetes verrucosus*, and others. There are, also, in the same rocks Coprolites from some of these Fishes, containing fragments of the shells of the Mollusks and Crinoids on which they fed. Remains of Fishes have also been found in the upper part of the Upper Silurian of Russia and Bohemia. *Ctenacanthus Bohemicus* Barr, abundant in Stage G.

The Hercynian fossils of the Hartz and Erbray have closer analogy with those of the Lower Helderberg than with those of the Upper Helderberg, but they also have close