

coiled chambered shells which almost any person would identify with Nautilus. They really have all the essential characters of Nautilus; but you will notice that they are not closely coiled; we do not find each whorl overlapping and concealing all the others; and the last whorl is even a little separated from the preceding one (*Lit-u-i'-tes*). Many others are coiled, but somewhat loosely, and the siphuncle is one side of the center—sometimes close to the outer margin (*Gy-roc'-e-ras*). Still others are curved enough to form one whorl, but not properly coiled, and the siphuncle is close to the outer margin (*Cyr-toc'-e-ras*). But we have not time to trace all the varieties of the type of chambered shells even among the Silurian limestones. We may have future opportunity to glance at the history of this type, and show the great improvements made in complication and decoration, during the Mesozoic ages.

In strolling through the quarries excavated in the Niagara limestone—in the suburbs of Chicago, for instance, or at Joliet or Waukesha—our attention is constantly arrested by the remains of shells, corals, and crinoids. The bivalve shells are chiefly *Brach'-i-o-pods*. They are lower in rank than clams and river mussels. They may always be known by having the beak and hinge in the center of the valve, with the valves presenting the same slope and curvature each way from the beak. They may also be known by having one valve more swollen than the other. Many also, have a deep depression (*Sinus*) along one valve from the beak to the opposite margin, and a corresponding elevation (*Fold*) in the opposite valve. Brachiopods are now nearly extinct. The univalve shells are mostly *Gas'-ter-o-pods*. These are higher in rank than clams and mussels.

The Crinoids were plant-like forms (*Zo'-o-phytes*) but strictly animals in nature. The most common kinds were rooted to the muddy sea-bottom, as is proved by specimens quite abundant in Niagara shales at Waldron, Indiana. The old roots are found going down into the clay like the roots of an oak. Above the root rises a stony stem, ten or fifteen inches high,