

proceeded a little farther with our talks. *Secondly*, since the lowest rocks of which we can gain any knowledge are *not* such non-sedimentary foundation, we are unable to affirm that we have ever explored to the bottom of the sedimentary rocks. There may have been underneath, originally, a vast additional amount of strata. We will study the oldest strata accessible to us, and observe how they lie in respect to the later strata.

If we travel over the surface of the country, we find it generally overspread by loose materials which, in the northern states are the so-called Drift. But here and there the bed-rocks appear at the surface. That is, they *outcrop*. The nature of the outcropping rocks is various. Sometimes they are limestone, sometimes sandstone, sometimes shale, sometimes granite or some other sort of crystalline rocks. It seems at first, as if every thing were in a state of confusion. But let us be patient; we shall discover order. We shall perceive that one sort of stratum passes under another, and perhaps at the distance of some miles, comes to the surface again. We shall notice that a different stratum or formation passes under this, and then perhaps comes to the surface again at some point still more distant—as if they were three wooden dishes in a pile—*A*, the largest; *B*, the next in size, and *C*, the smallest. *B* goes down under *C*, and comes up beyond *C*. *A* goes down under *B*, and comes up beyond *B*, on the opposite side. Many times numerous successive strata are nested in each other precisely in this fashion. The lower peninsular of Michigan is a good example. If you refer to the Table on page 73 you will see that the Coal Measures are *underlaid* by the Conglomerate Measures, the Carboniferous Limestone, the Catskill Group, the Chemung Group, the Hamilton Group, and the Corniferous Group. Each of these formations underlies the peninsula in the form of a broad, shallow dish. The Corniferous Group is at the bottom. Its margin comes to the surface in southern Michigan. You see it in the limestone at Monroe and throughout that region. Thence it passes under the state and comes to the surface again at Old