

sylvanian Series boundary) is at (or above) the top of the Lost Branch Formation. This boundary, which is at its traditional position in Kansas, Missouri, and Iowa, is marked by an upward transition from marine to terrestrial deposits with widespread subaerial exposure. Although it may thus be disconformable in places, it is not an unconformity of the stratigraphic magnitude previously believed, which was based on the miscorrelations. Depositionally, the Lost Branch Formation represents a single widespread inundation and withdrawal of the sea over the broad northern midcontinent shelf following the upper Memorial regression, which terminated the earlier, less widespread Lenapah inundations. The Lost Branch differs from the other widespread but limestone-dominated marine formations in the midcontinent Pennsylvanian by having only thin local developments of limestone. This difference probably resulted from a greater rate of transgression and regression for the Lost Branch inundation and consequent shorter periods of time during which the sea bottom remained within the appropriately shallow sunlit water depths favorable for carbonate production. The greater than usual marine withdrawal from the shelf that terminated Lost Branch deposition may have been responsible for the post-Desmoinesian extinctions in both biotic realms, both by crowding the marine organisms into small cr