

lying unconformably upon the Cretaceous deposits. From Alabama to Texas deposition likewise went on during these earlier epochs of the Eocene, for deposits of that time are found overlying the Cretaceous strata throughout the Gulf region. In North Carolina, however, there is no indication of sedimentation during this time, although the deep cover of Miocene deposits over the northern part of North Carolina and the southern part of Virginia make it difficult to determine the southern extension of the northern Eocene. It has never been recognized at the surface or in well borings, however, within the limits of North Carolina. If such deposition occurred the deposits were subsequently removed throughout the subaërial portion of the Coastal Plain. The depression, however, of the late Eocene involved the region to the south of the Hatteras axis. This submergence evidently came from the southward, for the region to the north of Cape Hatteras shows no trace of strata of this epoch, while southward to the Gulf late Eocene deposits are widely found. The submergence throughout the southern part of North Carolina was extensive, the sea transgressing the former land surface as far inland as Wake and Harnett counties and as far northward as the valley of the Neuse River. The deposits of this epoch, represented by the Trent formation, are not found continuously over this area, although it is probable that the sea extended over the entire southern part of the State and perhaps had a much wider distribution than is indicated now by the remaining deposits, which have evidently suffered greatly from erosion.

The deposits show that the sea of the time was a favorable abode for marine life. Extensive deposits of molluscan and bryozoan shells are found wherever the formation has been observed. The water was probably shallow, as is indicated by the occasional coarse pebbles that are found within the deposits, materials that were evidently derived from the underlying Cretaceous or from the crystalline rocks. During this submergence the ocean transgressed the Cretaceous sediments and in the western part of the region covered the crystalline rocks which had perhaps remained above the water during much of the Paleozoic and all of the Mesozoic eras.

During the Trent submergence the adjoining region was evidently low and the streams that entered the ocean from the land brought very little terrigenous material, deposition consisting largely of calcareous mud in which vast quantities of molluscan shells were imbedded.

After the deposition of the Trent formation there was an uplift of the region and erosion succeeded sedimentation. How long this period of erosion persisted we cannot tell, but it was long enough for the complete removal of the Trent deposits over wide areas.