

TERTIARY.

The Tertiary deposits consist of sands, clays, and marls, the last being highly glauconitic at the lowest horizons and calcareous higher in the series. They represent the Eocene, Oligocene, Miocene, and Pliocene periods. Oligocene strata are apparently absent from the middle and northern Coastal Plain regions, and therefore will not be further considered in this connection.

Eocene.

Deposits representing different horizons of the Eocene are found scattered more or less irregularly either along the eastern margin of the Cretaceous formations or as the result of transgression as isolated outcrops on the surface of the Cretaceous or even beyond the latter on the crystalline rocks of the Piedmont Plateau. The older Eocene deposits, which are largely sands, are highly glauconitic, in this respect showing a marked similarity to the Cretaceous beds below. The later Eocene deposits lose their glauconitic character and become often highly calcareous, the materials frequently being indurated by the calcareous cement. A profuse infralittoral fauna, chiefly representing the mollusca, bryozoa, echinodermata, zoantharia and foraminifera with fish teeth and reptilian bones and coprolites, is found.

The Eocene deposits of North Carolina consist of the later facies of Eocene sedimentation. They are highly calcareous and often indurated and occur irregularly scattered over the surface of the Cretaceous formations and even transgressing the latter onto the Piedmont Plateau. They often occur in depressions in the Cretaceous surface where they have withstood the erosion to which the rest of the deposits have been subjected, since there is every reason to believe that the Eocene beds had a much wider extent formerly and that the present isolated outcrops are merely remnants of a continuous or nearly continuous sheet. The Eocene deposits of North Carolina are all to the south of the Hatteras axis, as far as known. They are divided into the Trent and Castle Hayne formations, the relations of which are unknown from any observed contact, except in a single well boring, but they are probably unconformable, just as the Eocene deposits are unconformable everywhere in North Carolina to the underlying Cretaceous. Fossils of infralittoral marine types are numerous, although the molluscan forms are with difficulty determined because they occur largely as imperfect casts.

Miocene.

Miocene deposits constitute a thick mantle over the eastern margin of the older formations throughout much of the Coastal Plain area and