

believed to be. Instead of a single unit, as regarded by Maclure, it has been found, on careful investigation, to have had a complex history and to consist of many different formations based on differences in lithologic and paleontologic characteristics, and many of the formations are separated by marked unconformities. In Maryland, where the deposits of the Coastal Plain have been studied in great detail, 16 different formations have been recognized. Similar studies in New Jersey, Virginia, South Carolina, and the Gulf States have shown the Coastal Plain to consist of many units or formations.

In North Carolina the Eocene has thus far been considered a unit, and no formational names have been introduced. Recent studies, however, have shown that on the basis of its fossils and its lithologic characters, it is capable of division into at least two formations, and for these the names of Trent and Castle Hayne are proposed. It is not improbable that one or both of these may later prove to be synonyms of terms previously used to describe the same formations in South Carolina or Alabama, but, until such correlations have been definitely established, it seems best to use local names.

The possibility of dividing the Miocene of North Carolina into different formations was recognized by Dall, although he did not have the stratigraphic facts at hand to warrant such a separation. The field work that has been carried on by the United States Geological Survey in coöperation with the North Carolina Geological Survey during the past few years has furnished the necessary data for such division, and it is now proposed to refer the Miocene strata of North Carolina to three formations. The oldest formation is recognized as the equivalent of the St. Marys formation of Maryland and Virginia, which has been described in detail for the former State, while the younger Miocene strata are referred to the Yorktown formation, which receives its name from the town of Yorktown on the York River in Virginia, and the Duplin formation, which receives its name from Duplin County, where it is well developed in the "Natural Well." These formations are unlike, both lithologically and faunally, and, furthermore, are separated by unconformities.

The Pliocene of North Carolina is still somewhat indefinite, mainly for the reason that the paleontologic work has not progressed to a point where positive statements can be made. It is possible that the detailed study of the fossils may prove the existence of two marine Pliocene formations, though at present it seems best to refer all of these strata to a single formation, the Waccamaw.

It is recognized, however, that the Pliocene of the Cape Fear River is, in many respects, somewhat different from the deposits on the south side of the Neuse River in the vicinity of Croatan and Slocums Creek.