Miocene: FEET.

Dark green clay with a few casts. At base a thin line of small pebbles lies along the small but sharply defined minor irregularities of the undulating contact. At one place chunks of Patuxent material were found reworked in the base of the Miocene... 0-4

(Unconformity.)

Cretaceous (Patuxent formation):

Lenses of light drab, micaceous, arkosic sand and drab to very light drab clay, both very compact and in places indurated almost to a hard rock. In places numerous specks of iron pyrites were observed 4-8

At J. N. Smith's Landing, milepost 100, right bank, 6 feet of typical Patuxent sand and clay are exposed, overlain by 10 to 15 feet of Pleistocene terrace materials, the Miocene being entirely absent.

The last point on the river where the Patuxent formation is exposed is in the 75-foot bluff at Palmyra Landing, 79½ miles above the river's mouth.

At the base of this section, immediately below a bed of Miocene shell marl, there appears 3½ feet of very compact, dark greenish-gray, sandy clay, containing in places fine grains of iron pyrites. Along the base of the overlying marl bed and corresponding to a basal conglomerate there is present a line of quartz and phosphate pebbles up to 2 inches in diameter and an occasional broken piece of bone. Below Palmyra the river bluffs expose no materials older than Miocene.

South of Cape Fear River a number of stream and interstream localities revealing beds of the Patuxent formation have been studied. Particularly good exposures are presented by the railroad cuts in the sandhills of Harnett, Moore, and Richmond counties.

At Spout Springs, Harnett County, in cuts of the Cape Fear and Yadkin Valley Railway (A. C. L.) north and south of the station there are good exposures of compact, massive, purplish clay of the Patuxent formation overlain unconformably by arkosic sands.

The purplish clay was regarded by Professor Kerr and others as belonging to the Eocene and by Professor Ward as belonging to the Tuscaloosa formation. It resembles closely the clays of the Patuxent formation, however, and should probably be referred to that division.

Similar exposures occur in certain of the cuts to the north of Spout Springs for 3 or 4 miles, some of the cuts, however, showing only the sands of the Lafayette formation. Likewise, to the south of Spout Springs similar clays are met with in cuts to and beyond Manchester in Cumberland County.